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A TREATISE

ON

THE CULTURE

OF

THE CUCUMBER:

SHEWING

A NEW AND ADVANTAGEOUS METHOD OF  
CULTIVATING THAT PLANT,

WITH

FULL DIRECTIONS FOR THE MANAGEMENT THEREOF, AND  
THE DEGREE OF HEAT IT REQUIRES ON EVERY DAY  
OF THE YEAR;

AND

A METEOROLOGICAL JOURNAL of the Weather and Temperature  
of the Climate in Lat.  $51^{\circ} 20'$  North, Long.  $0^{\circ} 1'$   
East of London.

BY JAMES M'PHAIL,

GARDENER TO THE RIGHT HON. LORD HAWKESBURY.

SECOND EDITION.

LONDON:

PRINTED FOR T. CADELL, JUNIOR, AND W. DAVIES,  
(SUCCESSORS TO MR. CADELL) IN THE STRAND;  
AND BELL AND BRADFUTE, AT EDINBURGH.

1795.

[Entered at Stationer's Hall.]



*Complaints among Gardeners having been made re-  
specting the high price of the Treatise on the Culture of  
the Cucumber, for the accommodation of these, it is now  
separated from the Essay on Agriculture, which reduces  
the price to Five Shillings in boards.*

*The Hints and Observations on Agriculture, with a  
copious Introduction, are sold by the Author, and at the  
Booksellers.*



## ADVERTISEMENT.

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THOSE gardeners of my acquaintance, to whom I have explained the principles of my new method of cultivating and managing the Cucumber Plant, approve of it; but they, in general, say, Of what use will your method be to us, seeing we cannot put it in practice without the knowledge and approbation of our masters; because the bed must be built of bricks? This is, undoubtedly, a just and weighty observation; but, considering the small expense\* attending the building of a brick bed after my plan, and the many advantages arising therefrom, I cannot, for a moment, entertain a doubt that gentlemen will have the least objection to adopting the method: For I have always found, and I believe, most gentlemen are forward and liberal in encouraging gardening in all its branches, particularly those which furnish their

\* To build a bed for a three-light frame will require only about 700 bricks, 160 tiles, and lime, and labour.

tables with a succession of choice, wholesome, useful, rare fruits and vegetables.

But granting that gentlemen will not allow their gardeners a brick bed, yet I am in hopes that the directions which I have given relative to stopping the plants, setting the fruit, mould, heat, water, air, &c. will prove useful to many, especially to young men, even in the management and culture of the cucumber on a dung bed: This will infallibly be the case, if that be true, in general, which is said by a respectable modern author, I mean Dr. Hunter; for in his edition of Evelyn's *Silva*, published in the year 1786, vol. ii. p. 143, he says, "The gardeners advise that the barren flowers of cucumber plants should be carefully plucked off, by reason they think these deprive the plant too much of its nourishment; but, without doubt, they are mistaken; for the reason why the fruit drops off is, for want of being impregnated, and not for want of nourishment, as is the vulgar opinion." And nearly the same observations are made by the Rev. Robert Pierſon, and published in Hunter's *Georgical Essays*.

Both these learned gentlemen censure gardeners in general without giving sufficient directions themselves for performing what we gardeners call setting the fruit. This spirit of censo-



censoriousness may easily be accounted for, inasmuch as these eminent philosophizing literary gentlemen have the theory, but are without the practice\*: They, therefore, attribute the frequent failure of gardeners' crops of cucumbers to their not knowing that the plants bear male and female flowers; but I am clearly of opinion (and I doubt not but in this I shall have a majority, at least, of practical gardeners on my side), that the frequent failure of crops of cucumbers arises not so much from ignorance in gardeners respecting the plants bearing male and female flowers, as from causes with which these philosophers are probably not so well acquainted.

For my own part, rather than be without a brick bed for the culture of early cucumbers, I would be at the expense myself: The loss would be only that of the lime and labour, for the bricks retain their goodness.

It is known that I offered to publish a method of destroying the insects, and of healing the diseases which are natural to, and frequently destructive of,

\* An obstacle to the progress of arts and sciences has been the neglect of practice in theoretical men, and the ignorance or contempt of theory in mere practical men; and several, who have written on gardening, have taken more pains, and shown greater abilities in informing gentlemen what gardeners ought to do, than they have done in teaching gardeners how to do.

the pine-apple, melon, and cucumber plants. Some people may therefore be somewhat disappointed when they perceive that in this volume there is no receipt, remedy, or cure, given for that purpose.

Had I obtained subscriptions sufficient to have defrayed the expense, I meant to have published another volume, including my method of cultivating the melon and pine-apple; and to have divulged a singular way of extirpating the insects, and of healing the diseases of the said plants; but having come short in my subscription list, for the present I have confined myself to the culture of the cucumber only: But for the satisfaction of those who are troubled with diseases or insects in the progress of the management of their cucumber plants, I inform them, that if they chuse to adopt my method of culture, which is the most cheap, simple, safe, and easy of any, neither diseases \* nor insects will molest them, provided however that the feeds

\* Snails and slugs may sometimes be brought into the frames along with the mould. These may be expelled by the hand; but before the plants are set in the frames, boiling water may be poured plentifully on the mould, flues, and frames, which will effectually destroy all insects that may have got in while the lights were off, or have been brought in among the mould.

Mice in dung beds are often very troublesome; but my brick bed is so constructed that no mouse can enter.

which



which they sow, be free of infection; for it is an incontestable fact that diseases are sometimes hereditary in vegetables as well as in animals. And further, if any are doubtful of their seeds not being free of infection, or are not of a good sort, if they chuse to send or write to me free of postage, I will send them, gratis, seeds of the cucumber of my own sowing, perfectly free of infection, and of as good a sort for forcing as any in the kingdom.

In England subscriptions are become exceedingly frequent, and their frequency has rendered them liable to some abuses which begin to give them discredit.

In the year 1776, Mr. John Kennedy, gardener to Sir Thomas Gascoign, published a book, wherein he acknowledges that the pine-apple plants under his management were for several years in a very unprosperous state, occasioned by their being infested with insects, and that he tried every remedy that had been before published, but found them all ineffectual; but that at last he found out a never-failing remedy; this remedy he in that book published, and which is generally known.

In the year 1779, Mr. William Speechly, gardener to the Duke of Portland, published a pamphlet, price one guinea, on the culture of



the pine-apple, containing 174 pages, 72 of which are taken up in describing the different species of insects which infest forcing-houses and frames, and in giving receipts and prescriptions for their destruction. This author imitates the former, in saying that he tried every method he had heard of, both public and private, but all to no purpose; but that after many experiments, he luckily happened to fall on a never-failing remedy; this remedy, he says he has given with exact precision.

These two authors acknowledge the publication of many remedies, but pronounce them all ineffectual, except those of their own invention, which each in his turn holds forth as being infallible. But in this they seem to have written rather uncandidly; because they have neither quoted those authors who invented and published remedies before they did, nor have made comparison betwixt those ever-failing, and their never-failing remedies.

Again, in the year 1791, Mr. William Forsyth, gardener to the King, at Kensington, published a pamphlet, setting forth a never-failing cure for the diseases, defects, and injuries, in all kinds of fruit and forest trees. This author says, "He submits to the experience of the Public, a remedy discovered by himself, which has been applied

applied with never-failing success to all kinds of fruit-trees; and has not only prevented further decay, but actually restored vegetation, and increased fruitfulness even in such as were apparently barren and decayed." And, in a letter to the commissioners of the land revenue, he declares that "he is able to suggest a complete remedy for all the defects (meaning, as may be gathered from the Commissioners' letter, the "defects in growing trees of all ages which have sustained damage from any cause whatever"); "and that remedy he supposes to be known only to himself, as it is not a remedy drawn from books, or learned from men." These assertions may, for any thing I know, be true; but in perusing Evelyn's *Silva*, which was first published in the year 1678, in vol. ii. p. 149, I read the following paragraph, which has, at least, a great similarity to that wonderful remedy discovered and divulged by Mr. Forsyth:

"Cankers, of all others the most pernicious, corroding, eating to the heart, and difficult to cure (whether caused by strokes or galling, or by hot and burning land), are to be cut out to the quick, the scars implastered with tar mingled with oil, and over that a spreading of loam, or else with clay and dung."

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ADVERTISEMENT.

The treatise written by Mr. Kennedy, as also that by Mr. Speechly, were published by subscription; and the one written by Mr. Forsyth was, as I have been informed, intended for subscription; but government thinking the disclosure of the secret might tend to the benefit of the public, gave the author a reward for its discovery.

Notwithstanding all this, it is still acknowledged by those whose knowledge is not local, that on an average one half, at least, of the melon and cucumber plants raised in this kingdom yearly, are, by diseases and insects, brought into a sickly state \*, and frequently entirely destroyed: And, perhaps, not one house of pineapple plants in ten is, at this time, clear of diseases or insects: The same may be said in respect to the number of fruit and forest trees. This, to every intelligent observer, being evidently the case, there is still room for others to come forward, and offer methods to effect that which, in fact, is not yet effected.

Of all those who have published receipts or remedies for the destruction of insects on the pine-apple plant, none, to my knowledge, have

\* When plants are in a sickly state they cannot produce good or healthy fruit.



ever even pretended to cleanse an infected hot-house, without moving, shifting, cutting off the roots of the plants, washing, removing the tan, fumigating the house with sulphur, &c.; and after all this trouble and expence, if there happen to be left alive in the house, or on the plants, but one pair of male and female insects (even admitting the doctrine of univocal generation only), these will speedily produce a numerous offspring.

These few quotations and observations prove to a demonstration, that in coming forward with a profession of being in possession of an efficacious remedy, which is not made public, I only follow stale precedents; and although many have not become subscribers to my intended work, yet the number which have, convinces me that the method is still wanted and sought for; and I believe nothing so much hinders it from receiving more encouragement, as a general belief of its proving as little efficacious as those nostrums which have already met with ample encouragement for the bringing them into public view.

Having with mature deliberation considered these matters, I resolve to persevere in offering to publish my method, and if it shall happen that I am enabled so to do, it will accompany  
a Treatise

a Treatise on the Culture of the Melon and Pine-apple; and I mean to compare my scheme of destroying the insects and healing the diseases of the aforesaid plants with those methods which are already published; and in particular with those of the three authors whom I have quoted, and of whose writings I design taking a retrospective view, not for the purpose of depreciation, but for that of investigation, and that the Public may be able clearly to see whose method is the most preferable for healing the diseases, and for destroying the insects, which are accounted detrimental to vegetation.

Mr. Speechly, after giving his receipt for the destruction of those insects which infest the pineapple plant, suggests that a better and more easy remedy than his own might be invented; and for this end, he recommends that boiling water be poured upon quicksilver or mercury, and that the pineapple plants be constantly watered with this water, which he supposes would be so impregnated by means of the quicksilver, that the juices of the plants would thereby in course of time be so changed, that instead of continuing to be the natural and proper subsistence of the insects, they would become poisonous to them. These and such-like suggestions are the fanciful imaginations of the mere speculative



culative theorist, and to the theorist only would I recommend the putting such methods into practice; all gardeners, farmers, and cultivators, of whatever name, description, or denomination, I would caution against trying or putting into practice any theoretical experiments or methods whatever, which in any way tend to vitiate or spoil the active juices of plants; but, on the contrary, would recommend and advise them to endeavour to feed their plants at all times with wholesome nutritive food. For supposing water to be impregnated with quick-silver, mercury, or such-like, would the plants receive such water as food? and if they did, would their juices be by it so changed as to become poisonous to the insects? and if they were, would it not be dangerous for man to eat the fruit which derived its nourishment from the juices thus vitiated?

Insects are endowed with certain and determinate powers and inclinations, impressed on them by the almighty Creator; by which they seem arbitrarily, and without their own knowledge or consciousness, directed and impelled to the performance of those various operations which they execute with such unremitting industry and art. They have a natural disposition or sagacity, by virtue whereof they are enabled  
to



to provide for themselves, and know what is good for them, and are determined to propagate their species. This is instinct, and is put into action by the natural and primitive principle of self-love, or by a love of pleasure, and aversion to pain; producing a voluntary inclination to perform certain actions, which tend to their well-being and preservation. To the performance of these actions they are particularly prompted by their present sensations, by imagination supplying the place of memory, and other causes. The wonderful effects produced by these instinctive appetites are further to be attributed to the exquisite construction in their bodily conformation, particularly in the structure of the various organs with which they execute their operations, and to the superior perfection and acuteness of their external senses, by which they are quickly and distinctly informed of those qualities of objects which most materially concern them. By this instinct, each tribe of insects have a strong propensity to refuse individually, and with their whole united power, whatever in food or climate tends to shorten their lives, or slacken their natural progress.

Again, every insect has its proper plant, or tribe of plants, which it naturally requires for  
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its nourishment, and on which it generally lays its eggs, and that on the most concealed parts of the plant; and the plant, and insect which attacks it, are always natives of the same climate, and therefore endure the same degrees of heat and cold.

In hopes to be enabled at some future opportunity to discuss and investigate these matters, I shall for the present forbear to make any more observations on the subject: But from the few which I have made, may be drawn the following conclusion, *viz.* That, when certain plants are infested and attacked by their natural tribe of insects, it is an exceedingly nice point and curious operation to exterminate them, without injuring the plants, or stopping them *in* their natural growth.



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SUNDAY, April 27, 1794, was perhaps the warmest day ever remembered at that time of the year in this part of the country; for at noon the mercury in Fahrenheit's thermometer, in the shade, stood at 77 degrees, and the day throughout was proportionably warm.

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## PREFACE.

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I AM not the first who has written on the culture of the Cucumber, nor am I the first who has pretended to cause that vegetable to produce fruit in every month of the year \* ; but I have not known, or heard, of any gardener except myself that has so much as pretended to make it appear that he could produce cucumbers in every month of the year from the same plants.

I do not say, nor think, that I am possessed of more dexterity, nor even of so much, in the management of the cucumber on a dung-bed, as some are ; but I have invented a bed on which I am confident that I can produce cucumbers with more certainty, less expense †, and much

\* Some have been at the pains and expense to have ripe fruit in every month of the year, which is rather a curiosity than any real advantage. Millar's Dict. abridged. See Cucumis.

† Besides the saving in the dung and labour, the frames last longer on a brick bed than on a dung bed ; because on the bricks they stand dry and steady.



less laborious work to myself than any other person can do on a bed made of dung. It may not, therefore, be improper to give an account of the means which led me to this invention, and which I shall do as briefly as I can.

Before I came to live in this place, I had no experience of beginning to grow cucumbers earlier than about Christmas; but when I came to live in this neighbourhood, I was informed that several of the neighbouring gardeners began every year to sow their seeds precisely on the 20th day of October, and that they generally cut fruit in January or February following.

It was in the month of January 1785 that I came to live here, and I found nine lights of tolerably good cucumber plants, from which I cut fruit some time in the month of March; but not long after that they became infected with the mildew \*, which brought them gradually to an untimely end: And the same year I had little or no better success with those under hand and bell glasses. Thus the first year of my servitude in this place passed over with no small anxiety on my side; because I failed in having that vegetable either good or in plenty, which was required in the family.

\* I was informed that the cucumber and melon plants in this garden had for many years been subject to the mildew.

In the month of October 1785 I sowed the seeds of the cucumber, from which I raised very good plants; and as I was allowed plenty of dung, and had horses and carts at my command to bring it, and labourers enough to work and prepare it, I thought I might come to do as well as my neighbour; but before the month of March I found I was mistaken, and during the year 1786 I had but little or no better success than in the preceding: My anxiety, therefore, was in no degree lessened, but on several accounts rather increased\*.

The cause of my failure I attributed to the mildew and canker; I therefore studied to find out what was the cause of those diseases, in order that I might endeavour to discover a remedy for their cure; and, in process of time, I was fortunate enough not only to find out from what causes they proceeded, and a method of cure, but, what is still a better method, to prevent the plants from being infected. Yet, notwithstanding my having acquired the possession of these attainments, I was still at a loss

\* None but those who sensibly experience it, know the anxiety of mind felt by a servant calumniated, and in danger of losing both his place and character; and to have the prospect of being deprived of the ordinary means of subsistence, either through malice, prejudice, or oppression, needs more than common strength of mind to bear with patience.



how to produce cucumbers so early as a near neighbour, or so early as they were required in the family; for although I could, with much labour and great attention, preserve the plants alive through the winter, yet when the spring came, they were so weak and feeble that they were not able to produce fruit early, or in any quantity.

I was advised to apply for help to my neighbour, who, I was informed, had some secret method of promoting vegetation in winter, and which, as is said, was first found out and practised about Southgate, and that no person was to be let into this secret without paying a certain sum of money. The paying a little money for such a clever thing I had no objection to; but I was rather loth to have it said that I should be taught by one who, it might be expected, I ought to be capable of teaching: This, however, was only a piece of pride, over which, on due consideration, I for once obtained a victory. Accordingly I made application to my neighbour and brother-gardener, who readily consented to disclose to me the secret on condition that I should pay him five guineas; and so a bargain was made with seeming good will on both sides.

The

The principal thing which I was taught for my five guineas was to keep down the burning heat of the dung about the roots of the plants by pouring water into the bed. This I confess was what I had not been so well versed or instructed in before ; it therefore proved serviceable to me.

However, although I was well pleased with my instructor, because I thought he kept back no part of his knowledge from me, yet I was by no means satisfied with the secret, as it was termed ; for although it was what I was not well skilled in before, yet the laborious work, continual attention, and great expense, were, in no degree, curtailed or lessened, and success in keeping the plants in a growing state during the winter was still very precarious : And, indeed, no wonder ; for I believe it would be an overmatch for the ingenuity of the greatest of our modern artificers, philosophers, or naturalists, to find out methods, and give proper directions, for rendering and keeping the air in the frames of a dung-bed sweet, and to put and keep in motion that degree of vegetative power which is necessary for the growth of a cucumber plant during the winter months, when that grand luminary, the sun, which is one of the principal causes of vegetation, is by the Maker of all ordered



dered for a time to withdraw some part of his fructifying heat from the regions in which we live.

Having taken these matters into mature consideration, I reasoned with myself in the following manner :

That the cucumber plant must grow naturally, and without artificial heat, somewhere.

That it does not appear to me that there is any internal heat in the earth which effects the vegetation of a cucumber plant in its natural climate, but what is raised by the heat of the sun ; and that, therefore, if the air in the frames could, by any means, be kept up to a proper degree of heat, there would be no occasion for heat underneath the mould in which the plants grow.

That in the common method of cultivating the cucumber plant in the winter and early in the spring, the great difficulty arises from the want of heated sweet air, and that in trying to get the air in the frames properly warmed, the roots of the plants are often injured ; and as it is the roots which carry the nourishment to the plant, if the roots are destroyed or hurt, the plant, of course, must languish till it has made fresh roots again.

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These and such-like considerations induced me to make trial of several experiments, among which were the following :

Of rotten dung I made a ridge or bed two feet broad, thirty inches high, and as long as the frames which were intended to be set upon it. On each side of this ridge I made up a lining of good warm dung, raising it higher than the ridge of rotten dung on account of its sinking; after that the frames and lights were set upon it, and managed in all other respects as a common dung-bed.

Another experiment which I made trial of was upon an old well-settled dung cucumber bed, in which I made holes here and there to enable the heat of the linings to warm the air in the frames.

A third experiment which I tried was with green turfs, which I had cut handsomely, and with them I built up the sides of the bed cleverly, leaving and making vacuities for the circulation of the steam of the linings among the turfs and underneath the mould in the frames. These three methods answered pretty well, but they were only the prelude or leading to a better and more durable plan; for I thought of having a bed built of bricks; and, to be short, I schemed out a plan, and got it executed.



In the first brick bed which I had built, a flue was carried length-wise in the middle of each frame, and the hills of mould for the plants to grow in were made upon this flue ; but I was obliged to alter it, because I found the heat, introduced through means thereof, too powerful for the roots of the plants.

Also in the first bed I had six leaden pipes fixed in the frames, one end in the coverings of the flues, and which communicated with the steam of the linings, and the other end going through the north side of the frames, projecting about a foot beyond them : These pipes were intended to draw the heat out of the flues occasionally. Also in each three-light frame in the coverings of the flues I had round holes made here and there, and wooden plugs or stoppers fitted for them exactly. These holes or apertures were to admit the steam of the linings when sweet to enter the frames among the plants ; but these, as well as the pipes, I found by experience to be useless, and even in some respects rather hurtful : They are therefore justly exploded, which renders a description of their operations at this time altogether unnecessary.

In the first bed too the four-inch thick solid walls between each three-light bed were carried  
up

up full of apertures exactly the same as the sides of the bed : But these did not answer ; because in windy weather there was no check to the steam of the flues, and therefore one end of the frames was at times rendered too cold, and the other too warm.

In treating of the culture of the cucumber, I have, in the first place, taken notice of those parts of the globe in which I apprehend it naturally grows, and in particular that part of the world in which that vegetable was cultivated, and held in estimation by the ancients ; and it appears from the latest accounts we have, that the inhabitants of that country (Egypt) still continue to cultivate it in abundance, and even make its fruit, while in season, a part of their daily subsistence.

Secondly, I have given directions in what situation the bed should stand, and how it ought to be sheltered and protected from the high winds and inclemency of the weather, and have pointed out what sort of soil I think is the best for the culture of the plant, as also the sort of soil I use myself, the materials it is made of, and the method of making it ; I have shown that the heat of this climate is too little for the production of the cucumber, and have made some observations on the nature and degree of heat it requires.

Thirdly,



Thirdly, I have said something about the quantity and quality of water requisite for its nourishment, and have exhibited the ill consequences arising from giving too much or too little, and I have mentioned what degree of heat and temperature the water should be of when it is most proper for the nourishment and growth of the plants.

Fourthly, I have pointed out the necessity of supplying the plants at all times with fresh sweet air, and have shown the bad consequences resulting from their being supplied with contaminated or impure air; and I have given directions how to prevent unhealthy air from getting into the frames among the plants, as well as how to prevent impure air from being generated in the frames.

Fifthly, I have mentioned the method I take in making and managing the linings, so that the air in the frames may be kept up to a proper degree of heat, and sufficiently supplied with vegetative moisture: I have set forth the necessity of covering up the frames at nights, and recommended that particular attention should be paid thereto, and have laid down my method of covering and of uncovering.

Sixthly, I have described my method of stopping the plants, and of keeping them regularly thin

thin both in their shoots and in their leaves ; so that their nutritive juices may not be unnecessarily wasted in feeding superfluous branches and leaves.

Seventhly, I have taken notice that the cucumber plant bears male and female flowers ; it therefore differs from the greatest number of plants, whose flowers are hermaphrodite, that is, they contain within them the characters of both sexes \*, or the male and female organs of generation

\* The sexual system is suggested and confirmed by the analogy observable between the eggs of animals and seeds of plants, both serving equally to the same end, that is, that of propagating a similar race ; and, by the remarks which have been made, that when the seed of the female plant is not impregnated with the prolific powder of the male, it bears no fruit, insomuch that as often as the communication between the sexual parts of plants has been intercepted, which is the cause of their fecundity, they have always proved barren. The authors of this system, after exactly anatomizing all the parts of the plant, assign to each a name, founded on its use and analogy to the parts of an animal. Thus as to the male organs, the filaments are the spermatic vessels, the anthera the testicles, and the dust of the anthera corresponds to the sperm and seminal animalcules ; and as to the female, the stigma is the internal part of the female organ which receives the dust, the style answers to the vagina, the germ to the ovary, and the pericarpium, or fecundated ovary, to the womb.

The sexual system was not wholly unknown to the ancients, though their knowledge of it was very imperfect. Accordingly we find in the account by Herodotus of the country about Babylon where palm-trees abounded, that it was a custom with the natives in their culture of these plants to assist the operations of nature by gathering



ration are in the same flower. The flowers of the cucumber plant being not of the hermaphrodite

gathering the flowers of the male trees, and carrying them to the female. By this means they secured the ripening of the fruit, which might else, on account of unfavourable seasons, or the want of proper intermixture of the trees of each sex, have been precarious, or, at least, not to have been expected in equal quantities.

The ancients had also similar notions concerning the fig. Theophrastus observes, that the characteristic and universal difference among trees is that of their gender, whether male or female. Aristotle says, that we ought not to fancy that the intermingling of sexes in plants is the same as among animals; however, there seems to have been a difference of opinion among the ancients as to the manner in which plants should be allowed to have a difference of sex. Some apprehended that the two sexes existed separately, and others thought that they were united. Empedocles says that plants were androgynous or hermaphroditical, or that they were a composition of both sexes. Aristotle expresses his doubt upon this head. Empedocles called plants oviparous; for the seed, or egg, according to his account, is the fruit of the generative faculty, one part of which serves to form the plant, and the other to nourish the germ and root; and in animals of different sexes we see that nature, when they would procreate, impels them to unite, and, like plants, to become one, that, from this combination of two, there may spring up another animal.

As to the manner in which fruits were impregnated, the ancients were not ignorant that it was by means of the prolific dust contained in the flowers of the male; and they remarked that the fruits of trees never came to maturity till they had been cherished with that dust. Upon this subject Aristotle says, that if one shakes the dust of a branch of a male palm-tree over the female, the fruit will ripen quickly, and when the wind sheds this dust of the male upon the female, it ripens apace, just as if a branch of the male had been suspended over the female. And Theophrastus observes, that they bring the  
male

dite kind, it is necessary, for the rendering it prolific, that the male flowers, or some quality belong-

male to the female palm, in order to make her produce fruit. The manner in which they proceed, says he, is this: When the male is in flower, they select a branch abounding with that downy dust which resides in the flower, and shake this over the fruit of the female; this operation prevents the fruit from becoming abortive, and brings it soon to perfect maturity. Pliny also informs us that naturalists admit the distinction of sex not only in trees, but in herbs and in all plants, yet this is no-where more observable, he adds, than in palms, the females of which never propagate but when they are fecundated by the dust of the male. He calls the female palms, deprived of male assistance, barren widows; he compares the conjunction of these plants to that of animals, and says, that to generate fruit the female needs only the asperision of the dust or down of the flower of the male.

Zaluzianscki seems to have been the first among the moderns who clearly distinguished from one another the male, the female, and the hermaphrodite, plants. About one hundred years after him Sir Thomas Millington and Dr. Grew communicated to the Royal Society their observations on the impregnating dust of the stamina.

Camerarius, towards the end of the last century, observed, upon plucking off the stamina of some male plants, the buds that ought to have produced came not to maturity. Malpighi, Geoffry, and Vaillant, have all carefully considered the fecundating dust, the latter of whom seems to have been the first eye-witness of this secret of nature, the admirable operation that passes in the flowers of plants between the organs of different sexes. Many authors afterward applied themselves to improve this system, the principal of whom were Morland, Logan, Van Royen, Bradley, Gotliel, Ludwigius, Blair, Wolfius, Verdrees, and Monro; but Linneus had the honour of completing this system by reducing all trees and plants to particular classes, distinguished by the number of their stamina or male organs.



belonging to them, should co-operate with the female flowers; therefore I have pointed out the most judicious method of performing that operation.

Eighthly, I have mentioned what way the flues and brick-work of the bed are to be secured, so that the steam of the linings may not pe-

The sexual hypothesis, on its first appearance, was received with all that caution which becomes an enlightened age, and nature was traced experimentally through all her variations before it was universally assented to. Tournefort refused to give it a place in his system, and Pontedera, though he had carefully examined it, treated it as chimerical. The learned Dr. Alston, professor of botany in the university of Edinburgh, violently opposed it; but the proofs which Linneus has given amongst the aphorisms of his *Fundamenta Botanica*, and further illustrated in his *Philosophia Botanica*, are so clear, that the mind does not hesitate a moment in pronouncing animal and vegetable conception to be the same, but with this difference, that in animals fruition is voluntary, but in vegetables necessary and mechanical. The impregnation of the female palm by the farina of the male, related by M. Mylius, in his letter to Dr. Watson, establishes the fact attested by the ancients concerning the palm-tree; and as to the fructification in other vegetables (though it may differ in particular circumstances, it has nevertheless a conformity to that of the palm-tree with respect to the parts supposed to be the organs of generation, which are discoverable either on the same or in a separate flower), we may, from this single experiment, deduce an argument by analogy for the confirmation of the whole sexual hypothesis.

Besides, a very striking proof of the analogy between plants and animals may be drawn from observations made in their infant states, at which early period they seem nourished and protected in a similar manner.

netrate

netrate through them into the frames; and I have given directions in what manner the pits are to be filled up first with stones, broken bricks, or chalk, to drain the wet from the mould, and then with mould for the plants to grow in.

Ninthly, I have given a short account of the method generally practised in the cultivation of early cucumbers on a dung-bed, and have taken notice of some of the difficulties and inconveniences accompanying that mode of management, and which now may be exploded; because a better method is found out, and put in practice, and which is on a brick-bed simple in its construction, free and easy in its management: The preferableness of this new method over that of the old I have endeavoured to demonstrate.

Tenthly, I have given the method which I follow, and which I believe is generally practised in the cultivation of cucumbers in summer in the open air trained from under hand or bell glasses.

Lastly, I have made a few observations on the management held forth in the annexed journal, I have pointed out the errors which I fell into during the course of one year's management, and have concluded with mentioning the medium degree of heat which I wish to keep in the cucumber frames during the winter and spring months.

Upon



Upon the whole, I am in hopes that this effort of mine to render the cultivation of early cucumbers more intelligible, more easy, and more certain, will not prove ineffectual, but be acceptable and useful to many whose business it is actually to perform the practical part; and I am also not without some hopes of its being acceptable, at least in some degree, even to those whose business is not actually to cultivate, but who admire and encourage the bringing to perfection such fruits and vegetables as are generally thought worthy of being brought forward by means of artificial heat and moisture, and which, on account of the expense attending the mode of their cultivation, and the skill and attention required in their management, have, are, and ever will be, accounted rarities.

ADDISCOMBE PLACE,

May 1, 1794.

## INTRODUCTION.

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**F**OR the sake of perspicuity, and that no person may be at a loss to know my mode of management, I have subjoined a diary or journal, which contains an accurate account of the degrees of heat which I kept in the cucumber frames, during one year; and of every thing done, or thought necessary to be done, in the cultivation of the cucumber.

I have kept a journal for some years; and in the medium heat which I kept in the frames during that time, there is but little difference. I do not take upon myself to assert, that my mode of management with regard to heat, water, earth, and air, is the best that can be; but this I can with truth say, that with the degree of heat I keep, and the other co-operating elements, the plants continue throughout the season to produce plentiful crops of good, well-flavoured fruit.

If any person shall think that the degree of heat which I keep is too great, it is an easy matter for him to keep less; and if any person at any time want more heat, it is easily increased, either by larger coverings, less air, or more heat in the linings.



My method of keeping the same plants in bearing for such a length of time, is not a matter of mere curiosity, but of real advantage, to those who wish to be constantly supplied with that vegetable. However, were the plants to be destroyed in the months of July or August, and young plants in readiness beforehand to substitute in their place; such a mode of management, for any thing I know, might be more productive, than that of continuing on the same plants: But this I only give as theory. Unless it be for curiosity, I do not think that it is worth any gentleman's while, to try to have cucumbers for more than eight or nine months in the year; nor is it perhaps one year in three, that they will succeed, in the months of November, December, January, and to the middle of February.

I have frequently sown the seeds of cucumbers in the month of August, and have planted them in boxes of mould, placed on the back flues of the hot-house, not far from the glass, and have sometimes cut fruit from them till about Christmas.

In warm parts of the country, the glasses and frames may be taken off the plants of the brick bed, towards the latter end of June; and, if the summer prove fine, the plants will bear for at least two months: But to make sure of a constant supply of good clear fruit, I think it best to keep on the glasses all the summer.

Some gardeners take great pains in shading their plants, on days of hot sunshine; this method I by no means condemn, but I seldom practise it.

When

When I cultivated the cucumber on beds made of dung, early in the spring I was frequently obliged to shade the plants from the rays of the sun, to prevent their leaves from flagging; but shading the plants so early, is a great hindrance to them.

When the cucumber plant cannot stand the sun, but droops its leaves when his rays dart themselves upon it, the plant is not in a good state of health, or else air has been let in to the frames too suddenly, or in too great a quantity, or it wants water: If a cucumber plant be in a good state of health, the rays of the sun may scorch its leaves, but they will not cause the plant to flag; for the greater heat his rays dart upon it, the more upright will its leaves stand; for much heat makes the juices flow rapidly, and thereby the vessels of the plant, being filled with the vegetative juices, are distended, and the erection of the leaves of the plant greatly promoted.

It is not absolutely necessary to use thermometers in the cucumber frames: I myself, and many others, can manage the bed and frames very well without them, especially without one plunged in the mould. It may then be said, why do I use them? I answer, first for my own pleasure and satisfaction; and secondly, in order that I might the better give to every one who chuses to read, an opportunity of being able to approve or disapprove of my mode of management: And whether, in general opinion, the scale turn to approbation or disapprobation, yet the same cause will always produce the same effect; and, therefore, if any person chuses to keep the heat of



his frames to nearly the same degree as I do, together with a sufficiency of air and moisture, he may rely upon being successful.

I do not mean, that the heat should be kept to the very same degree, on every identical day of every year; for that would be impossible, unless every day in every year were to be of the same degree of heat: But as that is not in natural vegetation, neither can it be in artificial vegetation; for forcing vegetation is only assisting the climate, where the climate falls short in its productions.

The following register for one day, of the temperature of the open air, and of that of the cucumber frame, may serve to illustrate the foregoing paragraph.

*Tuesday, February 21<sup>st</sup>, 1792.*

Hours.	S. Th.	P. Th.	Ther.	Wind.
7	—	—	7	S. W. Clear, and a brisk air of
8	72	78	10	S. W. Ditto. [wind.
9	71	78	13	S. W. Bright sunshine.
10	72	78	18	S. W. Ditto.
11	78	78	21	W. Ditto.
12	80	78	23	W. Ditto.
2	85	79	25	W. Ditto.
4	80	80	23	W. Ditto.
8	—	—	16	W. Clear, and nearly calm.
10	—	—	17	W. Ditto.

If the register of this day be compared with that of the same day of the same month of the succeeding year, 1793, a difference in the degrees of heat will be seen; and so it will happen, in a less or greater degree,

degree, in every succeeding year, month, or day. But it may be observed, that the disproportion is in general greater in the open air, than in that of the cucumber frames, especially in the winter and spring months.

In my journal I have given the degrees of heat, according to the thermometer, in the open air in the shade, at different hours of each day, for twelve months. The thermometer hung on a nail, which was driven into a brick wall, having a north aspect, and the south side of it covered from the direct rays of the sun by a thicket of shrubs. The ground at this place lies on a declivity to the north, about one mile northward of Addington hills, which are barren of every vegetable, except heath of different sorts. Snow lies here for a short time after it is melted in the adjacent country; and the garden crops are later, by eight or ten days, than they are in some parts, only about four or five miles distant: This, I apprehend, is occasioned by the nature of the soil, which is various, even in the same field; some being a sandy loam, some a cold clay, and some gravelly, and underneath in some parts is strong clay, in other parts sand and gravel, and some parts are springy. In this part of the country, it is but seldom that the thermometer falls below 20, or rises above 80: It would, therefore, seem that the medium heat is about 50.

I have often tried the heat of the springs in this part of the country, and I never found them make the mercury in the thermometer fall below 44, nor



raise it above 56. The medium heat of the water of the springs, therefore, seems to be the same as the medium heat of the open air: But the water of the springs is much less liable to change than the air is, inasmuch as the cause of the changes in both, cannot operate with the same freedom on the one, as it does on the other.

The greatest degree of cold I ever observed, was on Tuesday, the 21st of February 1792: At seven o'clock in the morning of that day, the mercury stood at 7, and it rose no higher that day than 25, although the sun shone bright all day. And the hottest day I ever took notice of, was Sunday the 7th of July 1793, a register of which is to be seen in my journal.

It appears, from a register of the thermometer kept at London by Dr. Heberden, for nine years (that is, from the end of 1763 to the end of 1772), that the mean heat, at eight in the morning, was 47; and by another register, kept at Hawkhill, near Edinburgh, that the mean heat in that place, during the same period of time, was 46. By registers kept in London, and at Hawkhill, for the years 1772, 1773, 1774, it appears that the mean heat of these three years in London, at eight in the morning, was 48; and at two in the afternoon, 56: And the mean heat of three years, both morning and afternoon, 52. And the mean heat at Hawkhill, for the same time, at eight o'clock in the morning, was 45; and at two in the afternoon, 50: And the mean heat for the morning and afternoon, for the whole time, 47. The mean  
heat

heat of springs near Edinburgh, seems to be 47; and London, 51. Phil. Transf. vol. lxxv. From the Meteorological Journals of the Royal Society, published in the Philosophical Transactions, it appears that the mean heights of the thermometer, kept without and within the house, are as below :

	Ther. without	Ther. within
For 1775	- 51 5	- 52 7
1776	- 51 1	- 52 9
1777	- 51 0	- 53 0
1778	- 52 0	- 53 1

And, therefore, according to these observations, the mean heat of four years, estimated by the external thermometer, is 51. The least height, during this period, was on the 31st of January 1776, at eight o'clock in the morning, when it was 13: And the greatest height, which was on the 13th and 14th of July 1778, at two in the afternoon, was 86.

It is well known that heat, in all bodies, has a tendency to diffuse itself equally through every part of them, till they become of the same temperature: Again, bodies of a large mass are both cooled and heated slowly. Besides the mass of matter, there are two other considerations of much importance, in the slow or quick transmission of heat through bodies: These are, their different conducting powers, and their being in a state of solidity or fluidity. The conducting powers of heat are well known to be very various in different bodies; nor are they hitherto reducible to any law, depending either upon the density or chemical properties of matter.



Metals of all kinds are good conductors of heat ; while glass, in a heavy, solid, homogeneous body, is an extremely bad conductor, even when a metallic calx enters largely into its composition, as in flint glass.

A state of fluidity greatly promotes the diffusion of heat ; for a body in a fluid state, by the particles readily moving among each other, from their different densities or other causes, mixes the cold and warm parts together, which occasions a quick communication of the heat. To apply these observations to the present subject : The surface of the earth being exposed to the great heats of summer, and the colds of winter ; or, more properly, the low degree of heat in winter ; will receive a larger proportion of heat in the former season, and a smaller in the latter : And being, further, of a large mass, and of a porous and spongy substance ; and, therefore, not quickly sensible to small variations of heat ; it will become of a mean temperature at a certain depth between the heat of summer and cold of winter, provided it contain no internal source of heat within itself.

Water, though in a larger mass, follows in some degree the heat and cold of our summer and winter, from the fluidity of its parts occasioning a more speedy effusion of heat.

Air is quickly susceptible of heat ; and from the expansions produced in it, and consequent motions in the whole mass, the temperature is rendered soon uniform. The changes in the heat of the air are what we have measured ; and we are to be understood

flood to speak of them, when we talk of the temperature of summer and winter. It may be asked then, Is the heat of the sun first communicated to the air, and thereby to the earth? No: The air is susceptible of a very small degree of heat, from the rays of the sun passing through it; for it is well known they produce no heat in a transparent medium, and consequently, that the air is only so far heated as it differs from a medium that is perfectly transparent.

The heat produced by the rays of the sun, bear a proportion to their number, their duration, and their falling more or less perpendicularly; and it takes place at the points where they strike an opaque and non-reflecting surface.

The surface of the earth may, therefore, be considered as the place from whence the heat proceeds, which is communicated to the air above, and the earth below. That this is really the case, is evident, from the superior degree of heat produced by the action of the sun upon an opaque body, which will often be heated to 150 (Fahrenheit), while the temperature of the air is not above 90. It may seem, therefore, that, to measure the heat communicated to the earth, it should be done at the surface, where the action of the rays immediately takes place.

But though the heat be produced at the surface, it is communicated freely to the air as well as to the earth, from the rays of light acting for a longer time upon the same parts of matter; Yet there is little doubt that much the greater part is carried off, which as it is heated flies off, and allows a fresh  
portion



portion of cold air to come in contact with the heated surface.

But still it is immaterial, whether the heat of the sun be excited more in the earth, than in the air; for whichever has the largest portion, will in the end communicate a part to the other, and so restore the balance. The same observation applies to such causes of cold as may operate at the surface of the earth; as evaporation, and that taken notice of by Mr. Wilfon. The air, therefore, near the surface of the earth, will show by a thermometer in the shade, nearly, if not exactly, the same degrees of heat that the sun communicates to our terrestrial globe: And if a mean of the heats thus shown, be taken for the year round, and we penetrate into the earth to that depth that is no longer affected either by the daily, monthly, or annual variation of the heat; the temperature at such a depth should be equal to the annual mean above mentioned.

To ascertain this with the utmost precision, it must be obvious that numerous observations should be made every day, corresponding to the frequent changes of temperature, which are known to happen in the twenty-four hours in all climates; and upon these a daily mean should be taken, and the annual mean deduced therefrom. This has not yet been done: But when we have observations, from which a mean temperature can be deduced with any degree of certainty, it will be found not to differ greatly from the heat of deep caves or wells in the same climate.

If further experience and observation should confirm the above opinions, it will be attended with this advantage, that we shall be possessed of a ready method of ascertaining the mean temperature of any climate; which, with a few observations of the extremes of heat and cold at particular seasons, will teach us as much of the country, with regard to heat and cold, as the meteorological observations of several years.

For obtaining the temperature of the earth, the best observations are probably to be collected from wells of considerable depth, and in which there is not much water. Springs issuing from the earth, although indicating the temperature of the ground from whence they proceed, are not so much to be depended upon as wells; for the course of the spring may be derived from high ground in the neighbourhood, and it will thence be colder: And it may run so near the surface, as to be liable to variations of heat and cold, from summer and winter; or it may be exposed to local causes of heat in the bowels of the earth.

Wells seem also better than deep caverns; for the apertures to such are often large, and may admit enough of the external air to occasion some change in their temperature. Wells are, however, not to be met with in all places; and in that case, we must remain satisfied with the springs.

The following observations were made in the island of Jamaica, where there are flat lands in many parts towards the coast, but all the interior part of the country



country is mountainous: The heat is greatest in the low lands, and decreases as you ascend the mountains. The town of Kingston \* is supplied with water from wells; the ground on which it stands rises with a gentle ascent, as you recede from the sea. In the low parts of the town, the wells are but a few feet deep, and many of them brackish: The heat of the water in some of them is found to be as high as 82; but they are evidently so near the surface, as to be affected by the heat of the seasons. As you ascend, the wells are deeper; and the temperature is nearly 80 in all of them: What variations there are, come within one degree; that is, half a degree less than 80, or half a degree more. They are of different depths, and some not less than 100 feet; though if they are of half that depth, the temperature is nearly uniform.

Near Rock Fort is a spring, immediately at the foot of the long mountain; of which, though not a great body of water, the heat is 79. All the places mentioned, are but little above the level of the sea; probably not more than the depth of the wells, at the respective places.

The temperature of the air at Kingston admits but of small variations: The thermometer, at the hottest time of the day, and during the hottest season of the year, ranges from 85 to 90. In the severest season, and observed about sun-rising, which is the coldest time in the twenty-four hours, it ranges from 70 to 77: It has been seen as low as 69,

\* Kingston lies in latitude  $17^{\circ} 50'$  north, and in longitude  $76^{\circ} 32'$  west.

and sometimes as high as 91. The annual mean temperature cannot, therefore, either much exceed or fall much short of 80, as indicated by the wells.

*Philos. Transf.*

That heat and cold very much depend on the clearness or darkness of the sky, is attested by fact; for the winter cold in South America is very sharp, because the atmosphere is loaded with clouds and icy particles, which intercept the rays of the sun. At Lima, in latitude  $12^{\circ}$  south, where the sky is never free from vapours, the heat is moderate; but at the distance of a few miles, the sky is more serene, and there the heat is greater: And at Carthagena, in latitude  $11^{\circ}$  north, the heat on this account is intolerable.

The different degrees of heat and cold in different places, depend, in a very great measure, upon the accidents of situation, with regard to mountains or valleys, rivers, seas, and wood, and the nature of the soil. Mountains, especially when they are lofty and covered with snow, greatly help to chill the air, by the winds which come over them, and which blow in eddies through the levels beyond.

Mountains sometimes turning a concave side towards the sun, have the effect of a burning mirror, on the subject plain; and the like effect may sometimes be had from the concave or convex parts of clouds, either by refraction or reflection: And some even take these to be sufficient to kindle the exhalations lodged in the air, and produce thunder and lightning.

As



As to soils: A stoney, chalky, or sandy earth, it is known, reflects most of the rays into the air again, and retains but few, by which means a considerable accession of heat is derived to the air; as, on the contrary, black, loose, and swampy soils, absorb most of his rays, and return few into the air.

It is certain, that heat, communicated by the sun to bodies on this earth, depends much upon other circumstances, besides the direct force of his rays; these must be modified by our atmosphere, and variously reflected and combined by the action of the surface of the earth itself, to produce any remarkable effects of heat: So that, if it were not for these additional circumstances, it is much to be questioned, whether the naked heat of the sun would be very sensible.

To this purpose it is observed by Ulloa, in his Voyage to Peru, that on the western shore of that country, from Santa Maria de la Purilla to Lima, it is winter on the mountains from January or February to June, whilst it is summer in the vallies; but from June to November or December, it is winter in the vallies, and summer in the mountains.

It is found, by the science of astronomy, that the sun is farther from the earth in summer, than in winter; but as the eccentricity of the earth's orbit bears no greater proportion to the earth's mean distance from the sun, than 17 do to 1000, this small difference of distance cannot occasion any great difference of heat or cold. But the principal cause of the difference between the heat of summer and  
that

that of winter is, that in summer the rays of the sun fall more perpendicularly, and pass through a less dense or less thick part of the atmosphere; and, therefore, fall with greater force and in greater number on the same place: And besides, by their long continuance, a much greater degree of heat is imparted by day, than flies off by night.

“A regiment, which had been abroad at Carthage and Jamaica, was afterwards ordered into the Highlands of Scotland; and on one day in particular, as they were on their march in the Highlands, it was agreed by the officers and all the men, that they had never felt the heat so intolerable in the West Indies \*.”

Sudden changes from heat to cold, and from cold to heat, make either feel greater than they really are: In summer, if you put your hand into a good spring or well, you cannot with ease hold it long, on account of cold; and in the winter, the same spring feels warm, although the water of it be of the same degree of heat as it was in summer. Again, if in summer you go into a cellar under ground, the air feels cold; but if you go into it in the winter, the air feels warm, although its heat be nearly the same at both times: And in winter, when the open air is about freezing, if you go into a hot-house of about 65 or 70 degrees of heat, it feels very warm. Hence we may infer, that perhaps though the regiment thought the heat of the Highlands in Scotland more intolerable than that of Carthage; yet, in fact, the heat of the High-

\* Jones's *Physiological Disquisitions*, p. 167.



lands might not be so great as that of Carthageria. To my certain knowledge, the weather in some parts of the Highlands of Scotland is very cold: The nights are frequently frosty in the middle of summer. When I was a boy, I remember the ground to have been covered with a deep snow for thirteen weeks; I think it was about the year 1769. In the year 1791, at Croydon, which is ten miles south of London, in the month of June there were several frosty nights.

In Pennsylvania, in latitude  $40^{\circ}$ , the cold brought the mercury to 5, in 1732: At Paris, in 1709 and 1710, the mercury sunk to 8: At Leyden, in 1729, to 5: And at Utrecht, to 4. At London, in 1709 and 1710, the cold sunk the spirits almost down to the artificial cold of an ice and salt mixture: And in 1709, the mercury sunk to 0 at Copenhagen, lat.  $55^{\circ} 43'$ . At Upsal, in 1732, the mercury was at one degree below 0: And at Peterburgh, lat.  $59^{\circ} 56'$ , the cold was severe enough to sink the mercury to 28 below 0. But in more northern latitudes, the cold is much more extreme. Maupertuis, who wintered at the north polar circle in 1736-7, found the degree of cold at Torneo \*, lat.  $65^{\circ} 51'$ , sufficient to have made the mercury sink to 33 below 0: And yet this degree of cold is inconsiderable, compared with that which may be produced by art. In our climate, the heat of the air is most agreeable from 50 to 65. In captain Cook's voyage round the world,

\* Torneo is a town in Sweden; and it is said, the cold is so severe there, that sometimes people lose their fingers and toes.

In latitude  $14^{\circ} 32'$  south, the thermometer was raised to 85, which was the highest degree it got to during his voyage round the world; when he was crossing the line it was about 80 and 82.

In Dixon's voyage the thermometer was never above 91, and when in latitude  $0^{\circ} 8'$  south, which is nearly under the equator, it was at 85: This was on February 27th, 1788.

"The heat in Bengal in the summer months is variable in the shade from 98 to 120 degrees, and in the sun it probably does not fall short of 140 degrees \*."

The following extract is taken from Marsden's History of Sumatra:

"Sumatra is an island in the East Indies; the equator divides it in almost equal parts, the one extremity being in  $5^{\circ} 33'$  north, and the other in  $5^{\circ} 56'$  south latitude. It is found to lie  $102^{\circ}$  east of Greenwich. No country in the world is, perhaps, better watered than this: Springs are found wherever they are sought for; the rivers on the western coast are innumerable. The heat of the air is by no means so intense as might be expected in a country occupying the middle of the torrid zone; it is more temperate than in many regions without the tropics; the thermometer, at the most sultry hour, which is about two in the afternoon, generally fluctuating between 82 and 85 degrees. I do not recollect to have ever seen it higher than 86 in the shade: At sun-rise it is

\* Dr. Watson's Essays.



usually as high as 78." I do not find that Mr. Marsden has mentioned the degree of heat of the springs in Sumatra.

Dr. Mosely, in his book on Tropical Diseases, says, "In countries between the tropics the heat is nearly uniform, and seldom has been known to vary through the year on any given spot, either by day or night, more than 16 degrees. It is at a medium on the coast, and on the plains not much elevated above the level of the sea, at about 80 degrees of Fahrenheit's, or at 21 degrees of Reaumer's thermometer."

From what I have already mentioned it appears, that the heat of the wells of Kingston in Jamaica is about 30 degrees hotter than the wells in the neighbourhood of London, and the difference of the heat of the air is nearly the same. Kingston in Jamaica, where the mean heat of the wells and air is 80, is about  $17^{\circ}$  north of the equator, and London about  $51^{\circ}$ ; the difference, therefore, between London and Kingston is  $34^{\circ}$ , so that the heat of the wells and air, on a medium, increases from London to Kingston about one degree of heat to every degree of latitude \*. Hence might we not, with some degree of probability, infer, that as the increase of heat in  $34^{\circ}$  of latitude is 30, the heat in  $17^{\circ}$  of latitude may increase at least  $10^{\circ}$ ; and if it did, it would make the mean heat at the equator 90 degrees. And, for my own part, I am strongly inclined to think, that at the centre of the globe the mean heat of the air, as well as of the earth, is about 90 degrees of Fahrenheit's thermo-

\* And so it does between Edinburgh and London.

meter, and, perhaps, at the poles the mean cold is as low as 0.

Africa, as it were, stands in the centre of the globe, and, according to geographers, it is 4300 miles long, and 3500 miles broad; and, from the best accounts we have, it is the hottest country in the world.

“ As the equator divides this extensive country almost in the middle, and the far greatest part of it is within the tropics, the heat in many places is almost insupportable to an European, it being there increased by the reflection of the sun's rays from vast deserts of burning sands. The coasts, however, and banks of rivers, such as the Nile, are generally fertile; and most parts of this region are inhabited, though it is far from being so populous as Europe or Asia. In many parts of Africa snow never falls in the plains, and it seldom lies but on the tops of the highest mountains. The natives in these scorching regions would as soon expect that marble should melt and flow in liquid streams, as that water, by freezing, should lose its fluidity, be arrested by the cold, and, ceasing to flow, become like the solid rock.

“ The annual exportation of poor creatures from Africa hath exceeded 100,000, many of whom are driven a thousand miles to the sea-coast, their villages having been surrounded in the night by an armed force, and the inhabitants dragged into perpetual captivity. Those, who commit trespasses against their laws, are, at the decision of twelve elders, sold for slaves for the use of their government, and the



support of their chiefs. Theft, adultery, and murder, are the highest crimes; and whenever they are detected, subject the whole family to slavery. But any individual condemned to slavery for the crime of his relation, may redeem his own person by furnishing two slaves in his room; or, when a man commits one of the above cardinal crimes, all the male part of his family are forfeited to slavery—if a woman, the female part is sold: This traffic in crimes makes the chiefs vigilant. Nor do our planters who purchase them, use any pains to instruct them in religion, to make amends for the oppression thus exercised on them. I am sorry to say, they are naturally averse to every thing that tends to it; yet the Portuguese, and French, and Spaniards, in their settlements, succeed in their attempts to instruct them, as much to the advantage of commerce, as of religion. It is for the sake of Christianity, and the advantages accompanying it, that the English slaves embrace every occasion of deserting to the settlements of those nations.

“It is high time for the legislature to interfere, and put an end to this most infamous of all trades, so disgraceful to the Christian name, and so repugnant to the principles of our constitution. Let the negroes in our islands be properly treated, made free, and encouragement given to their population—measures that would be attended with no less profit than honour \*.”

\* Guthrie's Geography.

Africa, comparatively speaking, is but little known, modern travellers having penetrated no great way into its interior parts ; so that we are not only ignorant of the bounds of its interior parts, but even of the names of several of the inland countries. From the best and latest accounts we have of the inhabitants of Africa, they are frequently at war with one another. This is not much to be wondered at, when we see the professed Christians and enlightened philosophers of Europe causing the fields to swim with the blood of each other.

In the year 1788 a number of noblemen and gentlemen formed themselves into a society for the purpose of promoting the discovery of the inland districts of Africa ; and they have published their proceedings, which I have read ; but it does not appear that they have yet made any great progress. In page 90 of their book it is said, “ The heats of Fezzan, which begin in April, and continue till November, are intense ; that from 9 in the morning till sunset the streets are only frequented by the labouring people, and even in the houses respiration would be difficult, if the expedient of wetting the apartments did not furnish its salutary aid. Of this torrid climate the fierceness is chiefly felt from the month of May to the end of August, during which period the course of the wind is usually from the E., the S. E., and the S. W. ; and though from the two latter points it blows with violence, the heat is often such as to threaten instant suffocation ; but if it happens to change, as for a few days it sometimes does, to

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the



the west or to the north-west, a reviving freshness immediately succeeds." Fezzan, according to the map which the society has given, lies between  $25^{\circ}$  and  $30^{\circ}$  of north latitude.

Mr. Brydone, in his Travels through Sicily, found the thermometer rise to 112. This happened when the wind blew from the south-east, which is called there the *firocco* wind, and which is supposed to arise from the lands of Africa, in the neighbourhood of Syria. Mr. Jones says, that if the heat of this was such as has been reported by Mr. Brydone, it is probably the hottest air that has yet been observed with any accuracy in the known world. However, we find a more modern writer than Mr. Jones give an account of a greater degree of heat in the air than that mentioned by Mr. Brydone: I mean Mr. Bruce, from whose Travels I shall give the following extract:

"Chendi, by repeated observations of the sun and stars made for several succeeding days and nights, I found to be in latitude  $16^{\circ} 38' 35''$  north; and at the same place, the 13th of October, I observed an immersion of the satellite of Jupiter, from which I concluded its longitude to be  $33^{\circ} 24' 45''$  east of the meridian of Greenwich. The highest degree of the thermometer of Fahrenheit in the shade was on the 10th of October at one o'clock P. M.  $119^{\circ}$ , wind north; the lowest was on the 11th at midnight,  $78^{\circ}$ , wind west, after a small shower of rain. The degree of the thermometer does not convey any idea of the effect the sun has upon the sensations of the body or colour of the skin. Nations of blacks live within latitude

titude  $13^{\circ}$  and  $14^{\circ}$ , when,  $10^{\circ}$  south of them, nearly under the line, all the people are white, as we had an opportunity of seeing daily in the Galla, whom we have described. Cold and heat are terms merely relative, not determined by the latitude, but by the elevation, of the place. When, therefore, we say hot, some other explanation is necessary concerning the place where we are, in order to give an adequate idea of the sensation of that heat upon the body, and the effects of it upon the lungs. The degree of the thermometer conveys this very imperfectly: 90 is excessively hot at Loheia in Arabia Felix; and yet the latitude of Loheia is but  $15^{\circ}$ , whereas 90 at Sennaar is, as to sense, only warm, although Sennaar, as we have said, is in latitude  $13^{\circ}$ . At Sennaar then I call it cold, when one, fully clothed and at rest, feels himself in want of fire; I call it cool, when one, fully clothed and at rest, feels he could bear more covering all over, or in part more than he has then on; I call it temperate, when a man, so clothed and at rest, feels no such want, and can take moderate exercise, such as walking about a room without sweating; I call it warm, when a man, so clothed, does not sweat when at rest, but upon moderate motion sweats, and again cools; I call it hot, when a man sweats when at rest, and excessively on moderate motion; I call it very hot, when a man, with thin or little clothing, sweats much though at rest; I call it excessive hot, when a man, in his shirt at rest, sweats excessively, when all motion is painful, and the knees feel feeble as after a fever; I call it excessive hot, when the strength fails, a dis-



position to faint comes on, and a straitness is found in the temples, as if a small cord was drawn tight round the head, the voice impaired, the skin dry, and the head seems, more than ordinary, large and light.

“ At Sennaar from 70 to 78 in Fahrenheit is cool ; from 79 to 92 temperate, at 92 begins warm. Although the degree of the thermometer marks a greater heat than is felt by the body of us strangers, it seems to me that the sensations of the natives bear still a less proportion to that degree than ours. On the 2d of August, when I was lying perfectly enervated on a carpet in a room deluged with water, at twelve o'clock, the thermometer at 116, I saw several black labourers pulling down a house with great vigour, without any symptoms of being at all incommoded.”

When the air is heated to 116 degrees, the evaporation must be great\* ; so that Mr. Bruce, in that case, I think, must have been as if in a hot bath

\* Dr. Watson, in his Chemical Essays, says that 1973 gallons of water can be raised from an acre of ground in twelve hours, when the heat at the surface of the ground is 96.

“ During the extreme heat of the wind from the land, I have seen the mercury in Fahrenheit's thermometer rise in the shade to 114 degrees. I have known several instances of persons dying suddenly during the heat ; yet these accidents were to be ascribed to intemperance, or to their exposing themselves improperly abroad, rather than to the sole and immediate heat of the weather, which is not thought dangerous, or even unhealthy, to those who live with moderation, and do not go out in the excessive heat of the day.” See Sketches relating to the History, &c. of the Hindoos, p. 411.

bath.

bath. I do not recollect to have read in Bruce's Travels of what heat the springs or wells are in the countries of Africa through which he travelled. He tells us of his drinking of the water of the source of the Nile, but does not say whether it was warm or cold. The taking notice of the heat of the waters in foreign hot countries seems to have been omitted by many travellers.

By some accurate observations that were made on the heat of Bath and Bristol water by Mr. Canton, it appears that a thermometer held in the stream from the common pump of the King's bath, after pumping about half an hour, was raised to 112, and the stream from the common pump of the hot bath raised it to 114.

Buxton water has been observed to raise the thermometer to 80, and that of Matlock to 66 or 68. Dr. Falconer states the heat of the Bath waters, as they are commonly drank, of the King's bath 116, and of the Hot bath 116, of the Cross bath 112. I have read of springs being so hot that their water would boil eggs, &c.

There are several different thermometers in use among gardeners and others; but Fahrenheit's is the most general, and undoubtedly the best.

In my journal I have set down what sort of weather we had on every day, and the changes at or near about every hour of the day, at Addiscombe Place, during one year.

In the weather all mankind are less or more interested, and they seldom fail to make known their



their anxiousness by bringing it into conversation, when no other subject is going forward. In the course of his labours the farmer is obliged to be conformable to it; the journies of the traveller is regulated by it; to the sailor it is matter of life and death; armies are greatly concerned in it; and the gardener, in his labours and productions, is no less affected by it than either.

After all the knowledge which men can acquire, they will still remain under much uncertainty; but they may acquire so much as may be the means of avoiding much inconvenience. If the heat and cold of the weather depended entirely on the course of the year, and if the heat of climates were dependant on their latitude, then the weather might be brought to some regular theory. However, as general rules, in this part of the world, are subjected to many interruptions, in this case we are at a loss to-day to know what sort of weather to-morrow may bring forth; for the weather depends on causes with which we are but little acquainted. Therefore, instead of having principles and rules to direct us, as in other sciences, we are obliged to betake ourselves to the arts of prognostication, and it is a work of time and great observation to attain any skill in it, though every person, arrived at the years of maturity, pretends to some degree of it.

In general, the spring and autumn are mild, the summer warm, and the winter cold; but rains and showers, winds and storms, mists and vapours, are uncertain and occasional. The south and south-west winds

winds are in general warm, because they blow from a warm country; the north wind is cold, because it blows from a cold country; the east and north-east winds are dry, cold, and blighting, because they blow over the high mountains of the continent; but it is still a matter of doubt what sort of weather is likely to attend the winds.

When covering up the cucumber frames in the evenings, I take a view of the sky, from which I form an idea of what sort of weather is likely to happen in the night, and regulate the coverings and air accordingly; and sometimes at nine or ten o'clock at night I alter the air, by increasing or reducing it, so that it may correspond with the temperature of the night, as nearly as can be guessed at.

The best rule we have for predicting the weather is the instrument called a Barometer, which was invented by Torricelli, as we are informed, in the year 1643.

An ingenious author observes, that, by means of the barometer, we may regain the knowledge which still resides in brutes, and which we forfeited by not continuing in the open air, as they generally do, and, by our intemperance, corrupting the crasis of our organs of sense.

The following are Mr. Patrick's observations on the rising and falling of the mercury. They seem to be very just, and are to be accounted for on the same principles with those of Dr. Halley:

“ The rising of the mercury in general presages fair weather; and its falling, foul weather, as rain,  
2 snow,



snow, high winds, and storms. In very hot weather the falling of the <sup>Barometer</sup> thermometer indicates thunder; in winter, the rising presages frost; and in frosty weather, if the mercury falls three or four divisions, there will certainly follow a thaw; but in a continued frost, if the mercury rises, it will certainly snow.

“When foul weather happens soon after the falling of the mercury, expect but little of it; and, on the contrary, expect but little fair weather when it proves fair shortly after the mercury has risen. In foul weather, after the mercury rises much and high, and so continues for two or three days before the foul weather is quite over, then expect a continuance of fair weather to follow.

“In fair weather, when the mercury falls much and low, and thus continues for two or three days before the rain comes, then expect a great deal of wet, and probably high winds.

“The unsettled motion of the mercury denotes uncertain and changeable weather.

“You are not so strictly to observe the words engraved on the plates (though, for the most part, it will agree with them), as the mercury’s rising and falling; for if it stands at *much rain*, and then rises up to *changeable*, it presages fair weather, although not to continue so long as it would have done if the mercury were higher; and so, on the contrary, if the mercury stood at *fair*, and falls to *changeable*, it presages foul weather, though not so much of it as if it had sunk down lower.”

From

From these observations it appears that it is not so much the height of the mercury in the tube, that indicates the weather, as the motion of it up and down. Wherefore, to pass a right judgment of what weather is to be expected, we ought to know whether the mercury is exactly rising or falling; for which end the following rules are to be observed:

If the surface of the mercury is convex, standing higher in the middle than at the sides, it is generally a sign that the mercury is rising.

If the surface of the mercury is concave, or hollow in the middle, it is sinking.

If it is plain or level, or, rather, if it is a little convex, the mercury is stationary; for mercury being put into a glass tube, especially a small one, will naturally have its surface a little convex; because the particles of mercury attract each other more forcibly than they are attracted by glass.

If the glass be small, shake the tube, and if the air be grown heavier, the mercury will rise about half the tenth of an inch higher than it stood before; if it is grown lighter, it will sink so much. This proceeds from the mercury sticking to the sides of the tube, which prevents the free motion of it, until it is disengaged by the shock. Therefore, when an observation is to be made by such a tube, it ought always to be shaken first; for sometimes the mercury will not vary of its own accord until the weather it ought to have indicated be present. Dr. Derham says that the variations of the barometer are greatest nearest the pole; in places near the equinoctial there is scarce



scarce any variation at all. A thick dark sky, lasting for some time without sun or rain, generally becomes fair, then foul. A change in the warmth of the weather is generally followed by a change in the wind.

Most vegetables expand their flowers and down in sunshiny weather, and towards the evening and against rain close them again, especially at the beginning of their flowering. This is visible enough in the down of the dandelion and other downs, and eminently in the flowers of pimpernel. The rule is, if the flowers be close shut up, it betokens rain, and if they be spread abroad, fair weather. The stalks of the trefoil swell against rain, and the like may be observed, though not so sensibly, in the stalks of most other plants.

When a lowering redness is spread far upwards from the horizon, either in the morning or in the evening, it is generally succeeded by rain or wind, and sometimes by both. When black clouds move contrary to the wind, it is likely the wind will soon change, and rain follow. When the clouds scatter and disappear, or dissolve in the air, it is a sign of fair weather. The rainbow in the clouds prognosticates showery squally weather. Black clouds, collecting and augmenting in the air under other clouds, portend wind and rain. When the sun sets in a bank of black watery-like clouds, it augurs foul weather. When the rays of the sun, breaking through the clouds, are visible in the air, and the air seems filled with vapours, it betokens rain and showery weather. When the sky is overcast with lofty light clouds which appear

pear stationary, and the sun appears faintly through the clouds, it is likely there will be a change of weather. A circle round the sun or moon indicates a change of weather. I have frequently observed the earth and grafs almost entirely covered with threads like those of spiders; after which, dry weather has constantly for a time succeeded. These threads cannot be visibly seen but when the sun shines, nor unless a person stand with his face towards the sun. I am now writing on the 21st day of October, and there has been no rain here \* since the 2d, and on every sunshiny day since that time I have observed the earth and grafs covered with these threads. One day the beginning of last week I was about sowing a field with wheat, which field had been under fallow the preceding summer; and I observed the surface of the land, both before and behind the harrows, covered with these threads, suspended between the clods, waving and sparkling in the rays of the sun. How these threads came to be extended from clod to clod in so short a time after the ground was moved by the harrows, is what I cannot rightly comprehend, therefore must leave it for the decision of philosophers.

\* At Addiscombe Place.

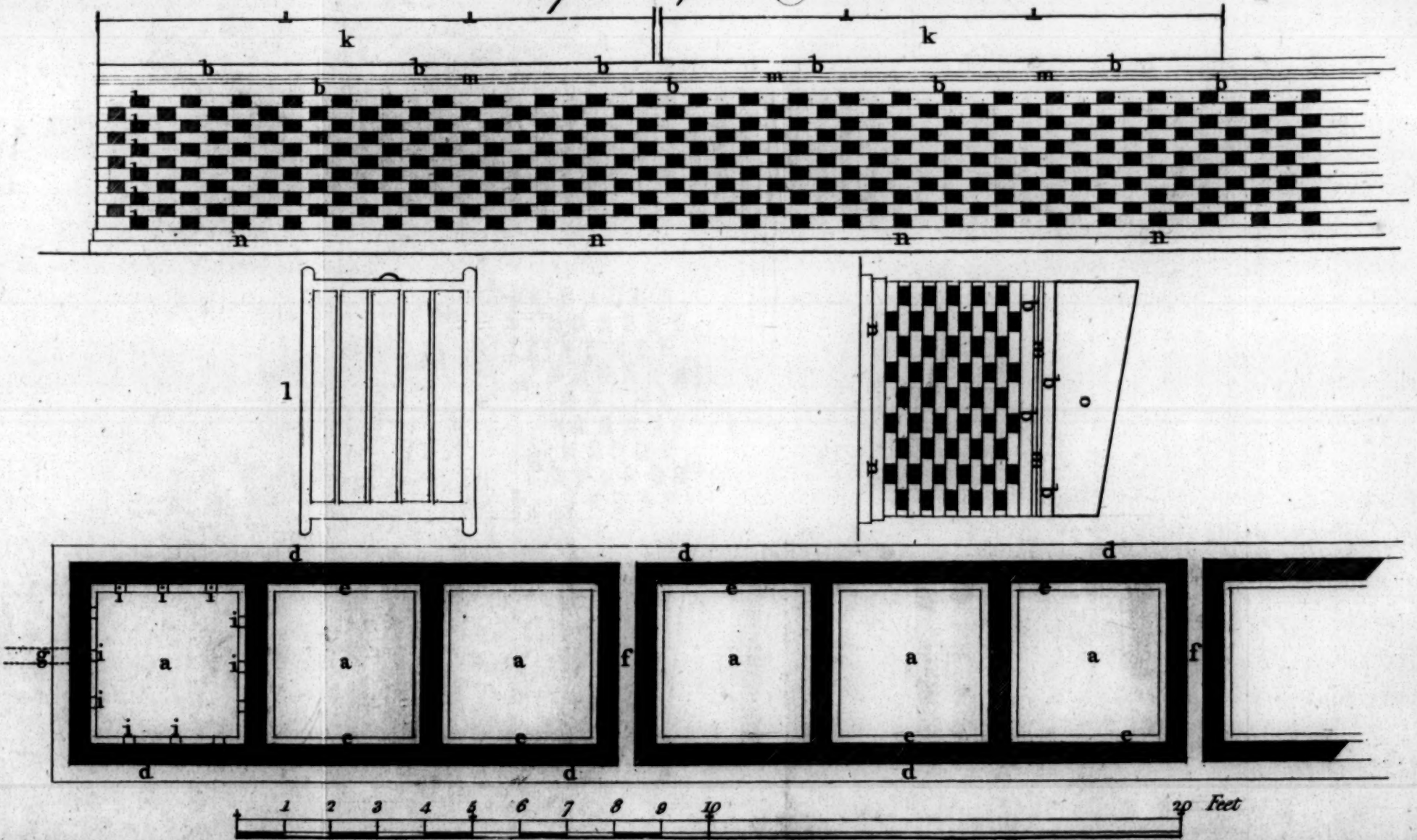




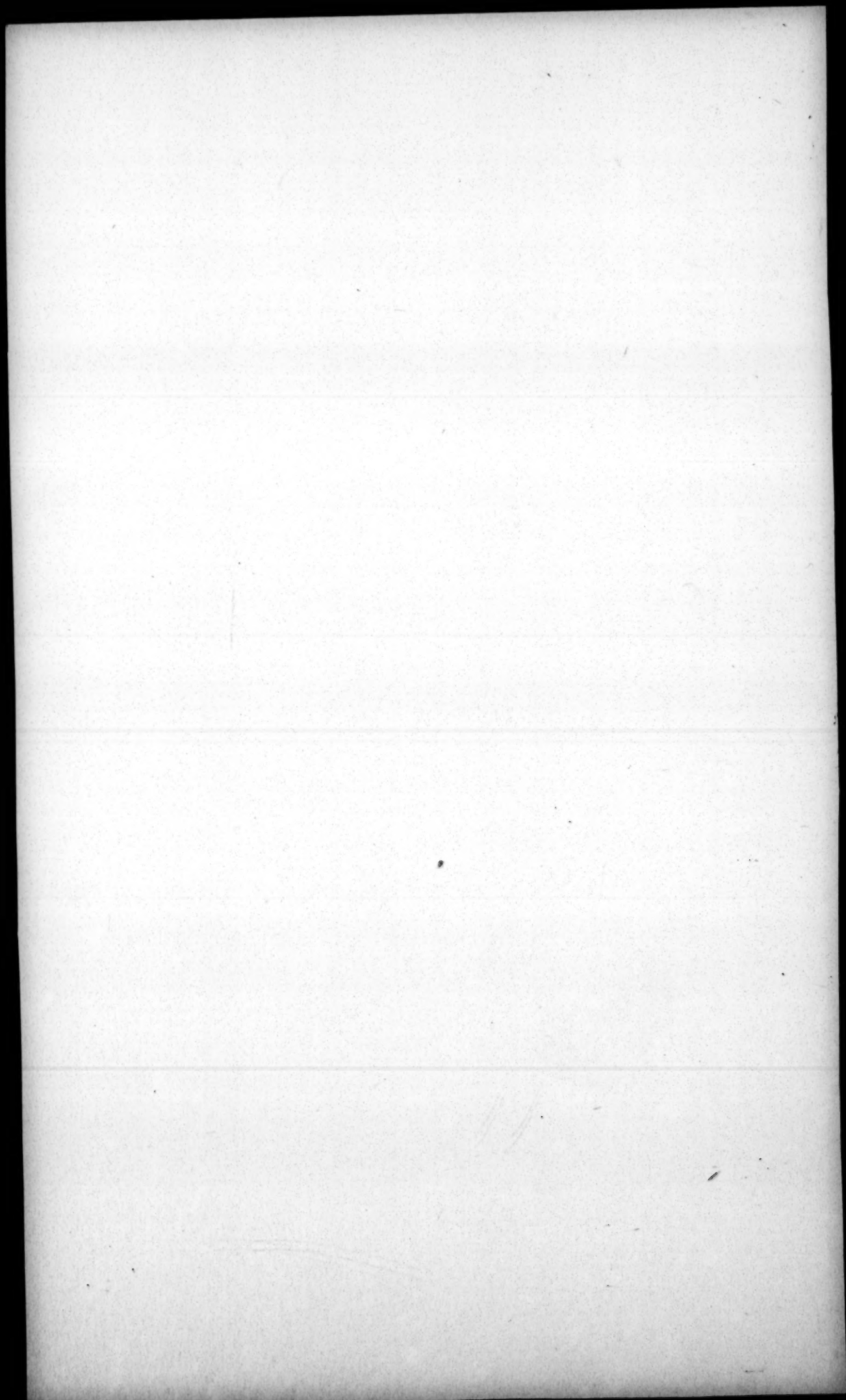




*- A plan of a Cucumber Bed.*



Published as the Art Director, May 1, 1904, by James H. Hall.





ON THE  
CULTURE OF THE CUCUMBER.

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**T**HE Cucumber, *cucumis* in botany, is a genus of the *monocotyledon* class. Its characters are these: It hath male and female flowers on the same plant, which are bell-shaped, of one petal, which adheres to the empalement, and is cut into five rough segments. The male flowers have three short stamens, which are inserted in the empalement; the female flowers have no stamens, but have three small pointed filaments without summits. The germen is situated under the flower, which afterwards becomes an oblong fruit with three cells, containing oval flat-pointed seeds.

There are, I believe, only three species of the cucumber, the common, the white, and the long Turkey, but there are many varieties.

The long green cucumber with black prickles, I think is the best for forcing. I have a very good sort of it, which I have had for eleven or twelve years, and which, when fit for the table, runs from six to twelve inches long, and, when ripe, runs to about eighteen or twenty inches long.

I cannot tell of what climate the cucumber is a native, but I imagine it is a native both of Asia and Africa. It is above three thousand years since mention was first made of it; for in the eleventh chapter of the Fourth Book of Moses, called Numbers, it is thus recorded: "And the mixt multitude that was among them fell a-lusting, and the children of Israel also wept again, and said, Who shall give us flesh to eat? We remember the fish which we did eat in Egypt freely, the cucumbers, and the melons, and the leeks, and the onions, and the garlic." From this we may infer that the cucumber in those days grew plentifully in Egypt: It is, therefore, not improbable but Egypt may be its native country.

Egypt lies between the 20th and 32d degree of north latitude, and between the 28th and 36th degree of east longitude; and, with regard to the temperature of the weather in it, in April and May the air is hot and often infectious, and the inhabitants are almost blinded with drifts of sand. Those evils are remedied by the rising and overflowing of the Nile.

"Whoever is in the least acquainted with literature knows that the vast fertility of Egypt is owing to the annual inundation of the Nile, occasioned by the rains which fall during May, June, and July, in Abyssinia, and the neighbouring countries of Africa. According to Mr. Volney, the commencement of the inundation is not entirely ascertained, though the Copts fix it at the 19th of June. At the height of its flood in the lower Egypt nothing is to be seen in the plains but the tops of forest and fruit trees, their towns



towns and villages being built upon eminences either natural or artificial. When the river is at its proper height the inhabitants celebrate a kind of jubilee with various festivities.

“ The banks or mounds that confine it are cut by the Turkish Basha, attended by his grandees; but, according to captain Norden, who was present on the occasion, the spectacle is not very magnificent. When the banks are cut, the water is let into what they call the Chalis, or grand canal, which runs through Cairo, from whence it is distributed into cuts for supplying their fields and gardens. This being done, and the waters beginning to retire, such is the fertility of the soil, that the labour of the husbandman is next to nothing. He throws his wheat and barley into the ground in October and May, he turns his cattle out to graze in November, and in about six weeks nothing can be more charming than the prospect which the face of the country presents, in rising corn, vegetables, and verdure of every sort. Oranges, lemons, and fruits, perfume the air. The culture of pulse, melons, sugar-canes, and other plants which require moisture, is supplied by small, but regular, cuts from cisterns and reservoirs. Dates, plantanes, grapes, figs, and palm-trees, from which wine is made, are here plentiful. March and April are the harvest months, and produce three crops, one of lettuces and cucumbers (the latter being the chief food of the inhabitants), one of corn, and one of melons.

“ The Egyptian pasturage is equally prolific, most of the quadrupeds producing two at a time, and the sheep four lambs a year \*.”

In England, and especially near large cities and towns, great quantities of cucumbers are raised. Not only gentlemen, but almost every tradesman who has a garden and dung, have their cucumber frame. In the summer time the market gardens round London produce vast quantities to supply that extensive metropolis.

The *Historia Plantarum*, published under the name of Boerhaave, informs us, that if the branches of cucumbers are much trodden upon, the fruit will be bitter and emetic ; and that a water distilled from cucumbers, when full ripe and beginning to putrify, purges smartly in the quantity of a drachm.

I myself have often found cucumbers bitter in taste ; which bitterness I conceive is occasioned in them through the want of proper food ; and the proper food of a cucumber plant is contained in sweet earth, sweet air, sweet water, and a sufficiency of heat.

I have been told that the cucumber is one of the four great coolers of the shops, and that it is almost an universal ingredient in emulsions, and is found of service in fevers and nephritic complaints.

“ The Galenists hold them to be cold and moist in the second degree, and then not so hot as either lettuce or purslain. They are excellent good for a hot stomach and hot liver ; the immeasurable use of them fills the

\* Guthrie's Geography.



body full of raw humours, and so indeed the immeasurable use of any thing else doth harm. The juice of cucumbers, the face being washed therewith, cleanseth the skin, and is excellent good for hot rheums in the eyes. It is usual to use the seeds in emulsions, as they make almond milk; but a far better way, in my opinion, is this: When the season of the year is to take the cucumbers, bruise them well, and distil the water from them; the face being washed with the same water cureth the reddest face that is.

“It is also excellent for sun-burning, freckles, and the morpew.”

A warm situation, sheltered from the winds by buildings, sheds, or thickets, and groves of trees, is of great advantage, and necessary for a cucumber bed to stand in; for were it fully exposed to, and unprotected from, the high and piercing winds, especially in the winter and spring months, there would be but little probability of constant regular success. For when high winds are suffered to blow against a cucumber bed, they have a very powerful effect on it; for in that case the heat in a short time will not only be greatly abated, but also forced and driven into the corners of the frames, and consequently some parts thereof are rendered too cold, whilst other parts are made too warm; and of course the plants are all equally endangered, retarded in their growth, and perhaps some, if not all of them, totally destroyed. Therefore, when a cucumber bed is about to be built, the first object of consideration should be,

to have it, as well as possible, sheltered from the high winds and boisterous stormy weather.

That the bed be not by any thing whatever obstructed from the genial or warm and nourishing rays of the sun, is another object of great importance. For although artificial heat will cause the seeds of cucumber plants to vegetate and spring forth, yet that vegetable can be brought to no degree of perfection without the influence of the sun, and even his rays are at times absolutely necessary. However, it will be found sufficient, if, in the shortest days in winter when the sun shines, he be not hindered from shining on the frames from about ten o'clock in the morning till about two in the afternoon.

It is also worth consideration to have the bed built in or near to the kitchen garden, so that it may be handy to carry from thence the rotten expended dung to such quarters of the garden as may require to be manured. Regard also should be had that nothing stand in the way to hinder carts or wagons from bringing the warm dung near to the place in which the bed stands.

There are two sorts of earths or moulds, without which, or a part of one or the other, I apprehend, a cucumber plant will not grow vigorous, nor produce fruit plentifully. The one is animal mould, the other is vegetable mould, and which are in fact nothing else but the putrefaction of earth after it has been altered by passing through the animal and vegetable vessels.

What



What I mean by animal mould is the dung of horses or of cows, after it has undergone a fermentation by being used for the rearing melons or cucumbers, and has afterwards lain in a heap exposed to the sun and air, and been frequently turned and well worked, till it has become a black, light, rich mould \*. But among such moulds are always considerable quantities of vegetables, such as hay, straw, and perhaps weeds of different sorts, which have not passed through animal vessels; therefore it is a composition of dung and rotten vegetables. In this sort of mould cucumber plants will grow remarkably strong; but I think it is rather too rich, and therefore those who use it had better mix it with some light soil, which has no unpleasant or disagreeable smell.

That which I call vegetable mould is what is made of the leaves of trees. The method I take to make it is this: In the months of December or January, or when the leaves are in a decaying state and wet, I have them raked together, and laid in a heap as large as will raise a moderate heat; and during the spring and summer months I have them frequently turned and well worked, and by October and November following they are rotten and fit for use: But if they are suffered to lie for a longer space of time before using, their mould is still better, because it will have become more rotten, and of a more solid tex-

\* Perhaps with more propriety may the earth of bones, flesh, horns, and skins, be called animal mould. When such things are by putrefaction reduced to earth, it undoubtedly contains much of the food of plants.

ture, and therefore will not sink so much after being put into the frames, as if put in when less rotten.

The leaves of which I make the vegetable mould, are a mixture of the elm, lime, beech, sycamore, horse and sweet chesnut, spruce and Scotch fir, walnut, laurel, oak, evergreen oak, ash, &c. and among them are withered grass and weeds of various sorts. This vegetable mould, without a mixture of any thing besides, is what I use for growing cucumbers in, and, by experience, I find it preferable to any other moulds, earths or composts whatever, either in my new method of a brick bed, or in the old method of a bed made of hot dung.

Before I use the mould I have it run through a coarse skreen or sieve to free it of the bits of sticks, and of the cones and tree feeds, such as that of the horse chesnut, and of the spruce and Scotch fir.

Cucumbers will grow in almost any sort of mould, though not with the same degree of vigour, provided they be supplied with a sufficiency of heat, water, and air.

In Britain, especially in the winter and spring months, one of the principal causes, without which cucumbers cannot be produced, is deficient, and that is, heat. In every county, and in every parish, and in every month of the year, earth, water, and air, may be found; but in every part, even in the most southern counties of England, there is a deficiency of heat: For, as far I know, that vegetable called cucumber, does not, in any part of this country, come to any degree of perfection without some assistance



assistance of artificial heat. Therefore, as the natural heat of this climate is deficient in its production, those who wish to have it in perfection, must have recourse to art to supply the insufficiency of nature.

Late in the spring, and in the summer months, the heat of tan, or of the leaves of trees, may do ; but in the winter and early in the spring, something that raises a more powerful heat than these is required.

A place could be so constructed that cucumbers might be cultivated therein by means of the steam of water ; but it would, I apprehend, be attended with such expense that few would be willing to adopt the method, even supposing it were found to answer the purpose better than dung ; which I am inclined to think it would not do, because I conceive that the heat which is produced by fire, cannot be kept so steady as that which is produced by the fermentation of dung.

Cucumber plants will grow in a hot-house where the pine-apple is cultivated ; but they will not be very long-lived there, for that is not a healthy climate for them.

Dung is the only thing yet found out, by the heat of which the cucumber may be advantageously cultivated.

It is not possible, nor is it necessary, to keep the air in the frames always up to the same degree of heat ; but extremes on either side are dangerous, and should be carefully avoided.

There

There is no necessity for having heat directly underneath the roots of the plants; for if the air in the frames be kept up to a proper degree of heat, that is sufficient. In climates where the cucumber naturally grows, I apprehend there is no heat in the earth but what is raised in it by the heat of the sun and the circumambient air, which seems to be warmed by the reflection of the sun upon the earth.

It is not only necessary that in the frames the air be kept up to a sufficient degree of heat, but it is absolutely necessary that nothing pernicious or unwholesome be conveyed into, or caused to arise in the frames among the plants by means of that heat. If the steam of the linings get in, it will hurt the plants; and if there be any thing which smells disagreeably in the mould or underneath the mould in the frames, the heat of the linings will cause unhealthy vapours to ascend from it, which in time will prove injurious to the plants. So that although there may be a degree of heat in the frames strong enough for the growth of the plants, yet, through means of that heat, something may arise in the frames which will become progressively, if not almost instantaneously, destructive of the plants, especially when they are young and tender. Care, therefore, must be taken that nothing be introduced into the frames among the plants but what is of a sweet wholesome nature.

If it were possible to keep the heat in the frames always to 80 degrees, with the concurrence of proper air and moisture, I am of opinion that that would be a sufficient heat for the production of the cucumber.

In



In the short days in winter little or no water is required, for the continual evaporation arising in the frames, and perspiration of the plants caught by the glasses, keeps dropping down again upon the mould, and, in some degree, imitates a natural watering from the clouds, and which is of service to the plants. Hence it would seem that the plants are often watered with the same water.

The mould in the pits retains the moisture surprisingly, which perhaps may be owing in some measure to the pits being constantly surrounded with the moist steam of the linings; and the bricks of the pits, and the tiles that cover the flues, being porous for aught I know, moisture, by the force of evaporation or attraction, gets through them into the frames. But be that as it may, I know that nothing hurtful or unhealthy ever gets through the tiles or bricks into the frames among the plants. The quantity of water requisite to be given to the plants depends upon the heat of the bed, the strength and age of the plants, and also on the temperature of the weather. When the weather is cold, wet, or gloomy, and the air moist, they require less water than when the weather is clear, and the air more dry.

If too much water be given, it will hinder the fruit from setting and swelling kindly; and if too little water be given, the plants will grow weak, and the fruit hollow.

I never wish to water the plants with water warmer than 85 degrees, nor colder than 65. Although, in general, I try by the thermometer the warmth of the

the water I use, yet it is not necessary so to do. A good way to know if the water be of a proper temperature is to take your mouth full of it, and when it feels neither hot nor cold, then it is in a fit state for accelerating the growth of the plants, or for making them grow fast. I make it a constant rule never to water the plants but with clean sweet water; and if the water be clean and sweet, I am of opinion it makes little or no difference whether it be pump water, spring water, rain water, or river water. However, it is a good quality in water to bear soap, and make a lather therewith, which rain and river water readily do; but the pump and spring waters are found too hard to do it; yet this may easily be remedied in them, by letting them stand a few days in the open air and sun's rays.

With regard to the time of the day in which the watering of the plants ought to be performed, I think it is not material, nor do I ever make any rule with respect to the time, but give them water at any hour of the day when I see they stand in need of it, and when it best suits my conveniency. Those who have hot-houses may get their water warmed there, and those who have no hot-houses may get some from the house, or from some other place where water is frequently heated. One gallon of hot water will properly warm several gallons of cold water. Late in spring and in the summer months the water may be warmed by exposing it to the rays of the sun.

A due proportion and continual supply of fresh air is at all times necessary, and more or less is required



quired according to the heat of the linings, the temperature of the weather, and the thickness of the coverings put on at nights.

When I say, *give air*, I mean that the lights should be raised or tilted on the north side with pieces of wood made in the form of wedges, by means of which little or much air can be admitted at pleasure.

The lights or sashes of frames or boxes are seldom or ever made so exact as altogether to exclude the external air, or to hinder it from having a continual ingress and egress, or from going in and coming out of the frames continually. And as the frames get old they wear, and then let in more air than when they are new, so that new frames may require the use of the air-sticks when old frames do not; therefore, in giving air, these and such like matters ought always to be duly considered.

When the wind blows from the east and north-east, the current of air goes in at the westernmost light of each frame, and comes out at the easternmost one; and when the wind blows from the west and north-west, it is just the reverse, for it then goes in at the easternmost light of each frame, and comes out at the westernmost one. That being the case, it is sometimes advisable to give less air at the light where the air goes in, than at that at which it comes out; for when the wind blows strong from those quarters, as well as from the south-west and south-east, the end lights of each frame next to the quarters from whence the wind blows, will be the warmest.

The

The air and heat in the frames are always most regular and steady when the wind is calm, or the bed well protected, and when the wind is in the south or in the north; but when the wind blows strong from any of the other quarters, and is suffered to beat upon any part of the bed, the current of air will be irregular, and at times very strong; and if there then happen to be a strong new lining at the bed, and a great rank steam arising out of it, especially at the north side, care, skill, and attention will be required, and must be exerted, for the preservation of the plants; for the steam being nigh to the place where the air is admitted, if much air be given while the wind continues high, the steam will undoubtedly be carried by the current of air into the frames, and if the steam be of a pernicious quality, the plants will certainly be hurt thereby. When such a case happens with me, I give but little or no air in the night time, and by frequent waterings I keep the steam of the linings down in the day-time; and this I continue to do till the winds subside, or till the violent fermentation of the linings be somewhat abated. But if the bed be well sheltered, such precautions will be unnecessary, for I have never experienced any hurtfulness in the steam arising out of the linings, except when the winds have been blowing strongly on the bed, and soon after the application of a powerful new lining of rank horse-dung, and when it was high up against the sides of the frames near to the place where the air was given; and even then



then the plants were not killed, but only some of their leaves injured.

As the steam rises out of the dung of the linings it is quickly dispersed and mixed with the common air, by which its pernicious qualities are almost instantaneously destroyed. It is, therefore, not likely that the steam arising from the linings on the outside of the frames should become hurtful to the plants in the frames, unless it were to pass immediately from the linings into the frames before its pernicious qualities were meliorated or destroyed.

In the frames there is a continual steam or evaporation arising; and as this vapour is of a sweet, healthy, invigorating nature, if too much air be given, it will pass off too rapidly, and that before it has had time to render to the plants that service which is necessary; and if too little air be given, the vapours will be retained too long, and become too thick, and thereby the free perspiration of the plants will be obstructed, which will soon render their state weak and sickly, and the fruit will neither set nor swell kindly.

In winter, when the heat of the linings is great, if care be not taken, the air in the frames will be rendered too dry. To prevent this, I either cover the flues thinly with moist mould, or keep them damp by watering \*.

\* In no part of the frame should the mould be suffered to become dry and husky. When the heat is great, water should be frequently and plentifully poured upon the flues, which will keep the bricks and mould adjoining to them in a moist state.

In

In giving and taking away the air I do it gradually, that is, by little and little at a time, which, without doubt, is the best way; for, as I observed before, sudden changes are always attended with unpleasant consequences.

The linings are to be applied to the bed a few days before the plants are ready for finally planting out, in order that the mould and every thing in the frames may be properly warmed for their reception.

The dung of which the linings are to be made may either be cast together in a heap, to bring it to a heat before it be laid round the bed, or it may be laid round the bed as it is brought from the dung-yard; but whichever of these methods be taken, when the linings are making up, the dung should be well shaken, and laid up lightly, so that the heat of it may come up freely.

The linings are to be made nearly three feet broad in their foundation, and tapered up to about thirty inches at the top, by which they will retain their heat long, and in sinking will keep close to the bed, which is what should at all times be paid proper attention to.

In the winter and spring months the linings should be trodden upon as little as possible, for treading on them would be the means of stagnating their heat. But should it at any time, in managing the plants, be found necessary to stand or kneel upon them, boards should be laid on their tops for that purpose; which will prevent the weight of a person from taking that effect on them which it otherwise would do.



As the linings sink, they are to be raised with fresh dung; but they should seldom be raised higher than about the level of the mould in the frames in which the plants grow, especially when there is a strong heat in them; for when there is a great heat in them, if they are kept higher than the level of the mould, the heat dries the air in the frames too much. Nor should they be suffered to sink much below the level of the mould in the frames; for that, on the contrary, would cause too much moisture in the frames, especially in the winter and spring months.

When the heat begins to be too little, notwithstanding the linings being kept to their proper height, the fresh unexhausted dung on the top or upper part of them is to be laid aside, and the exhausted dung underneath to be taken away, and that which was laid aside put in the foundation, and fresh dung laid above it in lieu of that which was carried away.

Both the side linings may be raised at one time, but both of them should never be renewed together; for if both were to be renewed at the same time, it would for a time cool the frames too much, and when the heat of both came to its full strength, it would probably be too powerful.

I seldom or never renew the end linings, because I find the heat of the side ones fully sufficient; for as there are flues or vacuities in every part of the bed, the steam, being fluid, circulates in, and warms every part thereof. And for the very same reason there is no occasion for having a strong heat in both the side linings at one and the same time.

In making up and pulling down the linings, care should be taken not to injure the brick-work.

The covering the lights in the winter and spring is absolutely necessary ; for, notwithstanding the heat of the linings, it would be impossible to keep up a proper degree of heat in the frames for the plants without coverings. Therefore, the covering up in the evenings, and uncovering in the mornings, must be particularly attended to, and more or less put on according to the heat of the linings and the temperature of the weather. My method of covering up is as follows : In the first place I lay clean fingle mats on the lights, in length and breadth just or nearly to cover the sashes, taking care not to suffer any part of the mats to hang over the sashes on or above the linings, for that would be the means of drawing the steam into the frames in the night-time. On these mats is spread equally a covering of soft hay, and on the hay is laid another covering of fingle mats, upon which are laid two, and sometimes three or four, rows of boards, to prevent the covering from being blown off by the winds. The mats laid on next to the glass are merely to keep the seeds and dust which may happen to be in the hay from getting into the frames among the plants.

In covering up, steps or short ladders must be used by those whose office it is to cover and uncover ; and great care must be taken not to break or injure the glass.

I know some gentlemen who have pits built in their cucumber and melon grounds : These they have built



built wide enough to make the bed in the middle, and room on each side of the bed for the linings. This is a very good method; but the building of such pits is attended with considerable expense: Those who have them should take care that there be drains as low as the foundations of the bed to carry off the water from it.

The method of raising the plants from seed is to be seen in the beginning \* of the journal of their daily management. I shall therefore proceed to give the method I follow in stopping the plants, and in keeping them regularly thin.

When the seedling plants have one or two joints, I stop them, after which they generally put forth two shoots, each of which I let run till they have made one or two clear joints, and then I stop them; and afterwards I continue throughout the season to stop the plants at every joint; and the method I take to do it is as follows:

When the plants shoot forth again after the second stopping, they seldom miss to show fruit at every joint, and also a tendril; and between this tendril and the showing fruit may clearly be seen the rudiment of another shoot; and when the leading shoot has extended itself fairly past the showing fruit, then with my finger and thumb I pinch it and the tendril off just before the showing fruit; so that in pinching off the tendril and the shoot, the showing fruit is not injured. Thus stopping the leading shoot stops

\* And also at the end. See October 5th, 1793.

the juices of the plant, and is the means of enabling the next shoot (the rudiment of which was apparent when the leading shoot was stopped) to push vigorously, and the fruit thereby also receives benefit.

When the plants are come into bearing, if the vines are suffered to make two joints before they are stopped, at the first of these joints, as I before said, will be seen showing fruit, a tendril, and the rudiment of a shoot; but at the second joint there is seldom to be seen either showing fruit or the rudiment of a shoot, but only a tendril and the rudiments of male blossoms. It is therefore evident, and but reasonable, that the shoot should be stopped at the first of these joints; for were the shoot to be let run past the first joint, and stopped before the second, perhaps no shoot would ever spring forth at the said second joint, but only a cluster of male blossoms or leaves, which would serve for no good purpose, but would rather exhaust the juices of the plant, which ought to be thrown into the productive parts of it.

If the plants are suffered to bear too many fruit, that will weaken them, and in such case some of the shoots will lose their leaders, that is, the rudiment of some of the shoots will not break forth, the numbers of fruit having deprived them of their proper share of the vegetative juices. The rudiments of some of the shoots may also be injured by accident, which sometimes prevents their pushing; but from whatever cause this happens, it matters not; for by the losing of its leader the shoot is rendered unfruitful, and therefore should be cut entirely off.

In



In the course of the spring and summer months several shoots break forth here and there from the old ones. When too many break out, I cut off the weakest of them close to the old shoots, and those which I let remain I treat, with regard to stopping, nearly in the same manner as young plants.

If the old shoot, from which the new one burst forth, lie close to the mould, it soon sends forth roots from the same joint from which the young shoot proceeded, by which the young shoot is much invigorated, and the old plant, in some measure, renovated.

When this young plant is fairly formed on the old shoot, it somewhat resembles a young plant formed and struck root on a strawberry runner. And if the shoot were to be cut off on each side of the newly formed plant, and no part of the plants left in the frame but itself, by proper treatment it would soon extend itself all over the frame.

In winter, when the plants are young, and before they come into bearing, it sometimes happens that they send forth too many shoots: In that case I cut the weakest of them off, not suffering them to become crowded and thick of vines, for that would weaken and prevent the plants from bearing so early as they ought to do.

The leaves of the plants I always keep regularly thin. The oldest and worst of them I cut off first, and I cut them off close to the shoot on which they grow. This is necessary and right; for if any part of the

stem of the leaf were to be left, it would soon putrify, and raise unhealthy vapours among the plants.

It is the female blossoms or flowers that bear the fruit; but if they were not to be impregnated by the male flowers, they would prove barren and unfruitful.

The female blossoms are easily to be distinguished from the male ones, for the rudiment of the fruit is apparent at the bottom of the female flowers, and the flowers have no stamina, but have three small pointed filaments without summits: Whereas the male blossoms have not any rudiment of fruit about them, but in the centre of the flower are three short stamina, which are inserted in the impalement.

When the female or fruit blossoms are in full blow, I take a male blossom which is in full blow, and holding it in one hand, with the other I split and tear off the flower leaves or petals, taking care not to hurt the stamina or male part. I then hold the male blossom thus prepared between the finger and thumb of my right hand, and with my left hand I gently lay hold of the female blossom, and holding it between two fingers, I put the prepared male blossom into the centre of the female blossom, and there the farina, polen, or dust of the anthera, clings or sticks to the stigma, and thus the impregnation of the fruit is effectuated, and the plants are thereby rendered fruitful, which, being in frames in a climate by art made for them, would otherwise in a great degree be rendered barren and unproductive; and which I  
have



have frequently known to have been the case, even when at the same time the plants were in a vigorous flourishing state.

I generally leave the prepared part of the male blossom sticking in the centre of the female one, and take a fresh male blossom to every female blossom. But if male blossoms run scarce, which seldom or never happens, I make one male blossom do for two or three female ones.

When the frames are going to be set upon the bed, a layer of mortar is spread all round upon the upper course of brick-work on which the bottoms of the frames are to rest. Thus the frames are set in mortar on the bricks; and the flues are with a bricklayer's brush well washed, and rubbed with a thick grout made of lime and water, which stops every crack or hole, and prevents the steam of the linings from getting into the frames. This washing of the flues I have done at least once a year, and oftener, if need be, for no crack or hole is ever suffered to remain unstopped in the flues.

I find little or no trouble in keeping the flues perfectly close, nor is it indeed likely that they should become troublesome if the bed stands on a sound foundation, for the heat of the dung has not that powerful effect on the flues, as fire heat has on the flues of a hot-house; because the heat of dung is more steady and not so violent as the heat of fire; and besides, the flues of the cucumber bed are almost always in a moist state, which is a preventative in them against cracking or rending.

When the bed is first built, the pits are about three feet in depth below the surface of the flues. These pits I have filled up about a foot high, some of them with rough chalk, some of them with small stones, and some of them with brickbats\* : This is to let the wet drain off freely from the mould of the beds. After this filling up with chalk, stones, and broken bricks, there is a vacancy in the pits about two feet deep below the surface of the flues ; this vacancy I have filled to a level with the surface of the flues with vegetable or leaf mould ; and in putting it in, it is gently pressed, to prevent it from sinking too much afterwards.

On the surface of the mould which the pits are filled with, under the middle of each light, and which is just in the centre of the mould in each pit, I make hills of mould in the same form as is commonly done on a dung bed. These hills are to set the plants in, and are raised at first nearly close to or within a few inches of the glass. Raising the mould at first pretty nigh the glass is necessary on account of the sinking of it ; for as the frames are set on bricks they cannot sink, but mould newly put in is sure to settle, and the measure of settlement will ever depend upon the lightness and texture of the mould with which the pits are filled. Therefore, these and such-like matters must be left to the discretion of those who are entrusted with the direction and management of the frames. When the bed is thus

\* Either of these, or such like, will do equally well.

finished,



finished, and ready for the reception of the plants, if the flues be strewed over with mould, so that their surface be just covered, to a stranger it is altogether a deception, for in every respect it has the appearance of a dung bed.

The sashes of the frames which I use are glazed in lead; but if any person who rears early cucumbers have lights which are not glazed in lead, but are slate glazed, the vacancies between the glass had best be filled up close with putty, to prevent too much air from getting into the frames in the cold days in winter. The frames under my management are constantly kept in good repair, and painted over once every year. This method, I am clearly of opinion, is more profitable than if the frames were neglected for two or three years, and then have a thorough repair with two or three coats of paint. When frames are new painted, they should be suffered to lie and sweeten for some time, at least for two or three weeks, or until the disagreeable smell of the paint be somewhat lessened.

Although the frames I use are of a very good size, yet if they were a little smaller or larger, they would answer the purpose very well. Therefore those who intend to build a bed after my plan, have no occasion to make new frames merely for the purpose, but they may get the bed built to fit the frames they are already in possession of.

The common and general method of cultivating early cucumbers is the following: The seedling plants are raised nearly in the same way as I did mine  
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in 1792, but few or none make use of a thermometer, nor is it absolutely necessary so to do. About three weeks before the plants are ready for planting out for good, a quantity of dung is procured, and cast up in a heap to heat, and let lie about a fortnight or three weeks, and during that time it is turned twice or thrice, and well worked. It is then made up into a bed of about four or five feet high, and the frames and lights set upon it. It is afterwards suffered to stand for a few days to settle, and until its violent heat be somewhat abated; and when it is thought to be in a fit state for the plants to grow in, its surface is made level, and a hill of mould laid in just under the middle of each light, and when the mould gets warm the plants are ridged out in it.

After this, if the bed has become perfectly sweet, and there be heat enough in it, and the weather prove fine, the plants will grow finely; but in the course of a few days the heat of the bed begins to decline, and perhaps the weather changes from fine, and becomes cold, wet, and gloomy; and in that case a lining of fresh dung to enliven the heat of the bed is undoubtedly required.

When this fresh lining is applied, it sets the bed into a fresh fermentation, and very frequently gives too much bottom heat, and it even often happens that the heat becomes too great under the plants before a lining is applied; for the heat of a dung bed is changeable, and is raised and lowered by the changes of the weather; and every person knows how variable the weather is in this part of the world.

When



When the heat becomes too powerful for the roots to grow in, the plants will show it by their sick, weakly appearance ; and if the mould on the surface of the bed under the plants be examined, it will be found of a gray colour : When this happens, it is called a burning heat.

The only methods that I have yet learned, or ever heard of, either for preventing or for curing this burning heat of the bed, are four. The first of these is, giving plenty of air ; the second is, making holes in the sides of the bed ; the third is, taking the burnt or over-heated mould out from under the roots of the plants, and putting fresh mould in its stead ; and the fourth is, pouring water into the dung of the bed to quench its fiery heat.

The first of these methods is the most simple and easy to be put in practice, but it seldom answers the desired end, for much air starves the branches of the plants, while the great heat in the dung of the bed hinders the roots of the plants from making due progress.

The second method, which is making holes in the sides of the bed to lessen the great heat of it, may be of some service, but it is rather precarious. The heat passing off on the outside of the bed certainly cools the bed ; but by that means the air in the frames is liable to be made too cold, and it is not the heat of the air that is wanted to be lessened, but the heat immediately under the hills of plants.

The third method is attended with more trouble than the two former, and its operations are attended  
but

but with little better consequences; for the taking the mould out from under the plants disturbs their roots, and, in a few days after, if the heat of the bed be not declined, it becomes too hot again, and the same work is again required. Thus with these three methods I have kept on from October till March, and during that time have paid great attention, and exerted all my ingenuity, yet have been but little forwarder with my plants than if I had not begun to sow the seeds before the month of February; and this has not only been my case, but, to my certain knowledge, that of hundreds besides.

The fourth and last method of keeping the burning heat of the bed under, is that of pouring water into the dung of the bed. This method is the best and most effectual of the four, but in its performance skill, care, and attention, are required; and it must be executed with such nicety and circumspection, that I freely confess I am not able to give such instructions concerning it, as might at all be depended on. For if too much water be poured in, it chills the bed, and creates noxious vapours therein; and if too little water be poured in, the burning will increase; so that by running to extremes on either side, the plants are exposed to danger, retarded in their growth, and perhaps attacked by insects and by complicated diseases, which, if not removed in a short time, will bring them to an untimely end.

The effect which the linings have on dung beds causes their sides to sink, and that unevenly, especially



ally if the dung of which the bed was made, was not thoroughly worked before it was put into the bed; and in sinking, the bed is liable to rend and give way in its sides, and therefore it is difficult to prevent the steam of the linings from penetrating into the frames among the plants.

In the winter, when the heat of the bed is much declined, it is a common practice to bore holes in the sides of the bed with a stake. These holes are to enable the heat of the linings to warm the bed properly; but as the dung of the bed is of a loose texture, through these holes the steam of the linings is apt to find its way into the frames among the plants.

When the dung of the bed gets old and rotten, it stagnates, corrupts, and becomes putrid; therefore the vapours which arise from it when in such a state, cannot be of a healthy nourishing quality, but, on the contrary, are certainly unhealthy, and slowly poisonous to the plants. And if the dung of the bed become dry and husky, the vapours that arise out of it when in such a state are productive of no better consequences.

It is well known that animals, which are fed upon sweet wholesome food, are the most wholesome food for man. And no doubt but the flesh of wholesome animals may be rendered somewhat unwholesome by the nature or quality of the food they are fed with.

Vegetables are, in many respects, similar to animals, and therefore may undoubtedly be rendered somewhat unwholesome to man by the nature of the food with which they are nourished.

I shall not enter into a philosophical disquisition of the food of plants, but shall only mention what I hinted before, that the food of the cucumber plant is contained in earth, water, heat, and air, and the sweeter these elements are kept, from which the plants derive their sustenance, the more wholesome and palatable will their fruit be.

When I used to cultivate cucumbers on a dung bed, the fruit were sometimes watery and ill-tasted; but since I began to cultivate them on a brick bed, the fruit have constantly been firm and well-flavoured; which is certainly occasioned by the goodness and wholesomeness of the food with which the plants are fed or nourished.

The difference of climate, or temperature of the air, has a very great effect on plants of almost all sorts. The different degree of heat is the great cause of these changes, and different degrees of moisture undoubtedly assist it. The American and African plants, which are said to be famous in medicine, when of the growth of their native soils, yet when they are removed and brought into our climate, though they grow, and even produce their flowers and ripen their fruit, which is the last perfection of a plant, when put to the trial, it is said by skilful men, they have always been found to want their proper medicinal virtues.

Many plants and trees, though natives of another climate, will endure the open air with us, and grow in our gardens, yet lose much of their strength and become dwarfs in proportion to what they were in  
their



their proper climate. But less violent changes than these are able to produce the like effects, at least in some degree; for the several parts of Europe are able in time to alter the qualities of the same plant, even while it grows natural in them.

The differences made by varieties of climates upon plants are not always confined to distance of place, but even in the same country the climate differs greatly in different years by means of accident; and more or less heat, and more or less moisture, will do as much violence to plants sometimes as change of place, which operates only by means of the same agents. The effect of different climates in changing the nature of things produced in them, is not confined to plants only, but the animal kingdom also shares in it.

A cucumber plant delights in sweet wholesome air; but if the air in which it grows be contaminated, unhealthy, or impure, the plant will not continue long in a healthy flourishing condition.

Whatever is disagreeable to the smell becomes in time hurtful to the cucumber plant; therefore, whoever would wish to know if the air in a cucumber frame be of a healthy nature for the plants, should smell to it.

All the materials of my newly-invented bed are clean and sweet; and the flues being made perfectly close, no tainted or bad-smelling air can get through them into the bed, so that it is of little or no concern whether the dung of the linings be sweet or otherwise, or whether the linings be made of dung or of any thing

thing else, provided there be a sufficient heat kept in them.

The bed is so constructed, that the coldest place in it is exactly in the centre of each pit, and from this centre the heat increases on each side to the linings where the heat begins. The plants being planted in this centre or coldest part of the bed, their roots can never be hurt by the heat; and as it is natural for the roots to spread themselves horizontally, the heat, increasing on each side gradually, is in every respect suitable for their increase and extension.

The heat in the centre of each pit, just where the plants are first planted, seldom rises higher than to about 80 or 85 degrees, nor does it ever rise higher in any part of the pits than about 96 or 97 degrees, nor do I believe it ever can be raised higher than that, without scorching the plants by top heat or heated air; whereas in a bed made of dung, the heat in the centre of the bed under the mould in which the plants are planted, frequently rises to above 120 degrees, when, at the same time, the air in the frames can scarcely be kept up to a proper degree of heat: This frequently happens in cold weather in winter.

“ The scorching heat of a hot-bed of horse-dung, when too hot for plants, is equal to 85 degrees and more, and hereabout is probably the heat of blood in fevers.

“ The due healthy heat of a hot-bed of horse-dung in the fine mould, where the roots of thriving cucumber plants were in February, was equal to 56 degrees, which



which is nearly the bosom heat, and that for hatching of eggs. The heat of the air under the glass frame of this hot-bed was equal to 34 degrees, so the roots had 26 degrees more heat than the plants above ground: The heat of the open air was then 17 degrees \*."

According to Dr. Hales the heat of the human blood in high fevers is above 130 degrees of Fahrenheit's thermometer; the bosom heat, or heat of the skin, is from 94 to 98 degrees; the heat of a hen hatching eggs is from 103 to 107 degrees. It appears that 60 degrees of Fahrenheit's thermometer is equal to about 34 of Dr. Hales's thermometer; hence we may infer, that the heat of Dr. Hales's cucumber bed stood nearly as follows: - The heat of the mould in which the roots were growing 100 degrees, and the heat of the air in the frames 60 degrees. Now as the surface of the mould, which was heated to about 100 degrees, must be exposed to the heat of the air in the frame, which was 40 degrees lower, I think it is but reasonable to suppose that the heat of the dung under the mould must have been at least 120 degrees.

I am inclined to think that Dr. Hales did not himself manage this cucumber bed; for, if he had, I think he would have favoured the public with an account of how long it continued in that due healthy state, and what methods he took to keep it in that state, and of the success attending his labours with regard to the produce of the plants.

The dung for the linings of the bed of my invention requires no more working than what is neces-

\* Hales's Statics, vol. i. p. 60.

fary to bring it to and keep it in a proper degree of heat ; and as soon as the heat rises in the linings, it circulates in the flues, and warms every part of the bed ; whereas the dung for making a common cucumber bed must be turned and worked, and lie, till, by fermentation, its rank qualities be evaporated, and its violent heat be somewhat diminished.

In the course of the winter a dung bed sinks so low that it becomes difficult sometimes to get a proper heat raised in the linings ; but my brick bed being always of the same height, such difficulty can never happen.

The linings of my brick bed retain the heat longer than the linings of a dung bed do, and that because the flues are constantly full of steam ; but a dung bed having little or no vacuity for the retention of the steam, the steam of the linings of it is more immediately evaporated, and consequently the heat of the linings is sooner exhausted than the heat of the linings of the brick bed.

To illustrate this a little farther, it may be observed that there is a certain quality in dung which is the cause of its heating. While this quality, or any part of it, remains in the dung, it retains the heat in some degree ; but when that quality is totally exhausted, the heat in the dung ceases.

There is another method besides that of fermentation by which dung may be deprived of this quality ; and that is, by being exposed for some time to the sun and air in spreading it thinly on the ground. In that state the dung's heating quality will be evaporated,



porated, and were it to be thus exposed, it would also lose much of its vegetative powers. Hence it appears evident, that the steam, which undoubtedly contains the heating quality, being retained in the flues or cavities of the bed, and reverting to its first source, is the means of enabling the linings to keep the heat longer than they could do if there were no such cavities in the bed.

In the cultivation of the cucumber in the summer, under hand or bell glasses, the following method is generally practised: The seeds are sown some time about the middle of April in a cucumber or melon bed, and when they come up, they are potted out into small pots, two or three plants in each pot, and are kept properly watered, and stopped at the first or second joint. About the middle of May, a warm situation where the mould is very rich is pitched on, and a trench is dug out about two feet deep, three feet broad, and the length is proportioned according to the number of lights it is intended for. This trench is filled with good warm dung, and when the dung is come to its full heat, it is covered over with eight, ten, or twelve inches deep of rich mould. The glasses are then set upon it about three feet distant from each other, and when the mould gets warm under them, the plants are turned out of the pots with their balls whole, and plunged in the mould under the glasses, and a little water given them to settle the mould about their roots, the glasses set over them, and in fine days they are raised a little on one side to let the plants have the free air; and

as the weather gets warmer and warmer, air is given more plentifully to harden the plants, so that they may be able to bear the open air, and run from under the glasses.

When the plants begin to fill the glasses, they are trained out horizontally, and the glasses are set upon bricks or such-like, to bear them from the plants. After this the plants require nothing more but to be supplied with water when the summer showers are not sufficient, and to stop them when they run too thin of branches, and thin them of leaves or branches when they are likely to become over-crowded.

In warm summers and in warm situations, by this mode of management the plants will bear plentifully for about two months, provided they be not attacked by insects or weakened by diseases.

It is to be seen in the following journal, that on the 22d of October 1792 I sowed the seeds of the cucumber \*, and ridged out the plants upon the 16th day of  
of

\* The cucumber plant may be kept on from year to year by cuttings. The method of sticking them is this: Take a shoot which is just ready for stopping, cut it off just below the joint behind the joint before which the shoot should have been stopped, then cut smooth the lower end of the shoot or cutting, and stick it into fine leaf or other rich mould about an inch deep, and give it plenty of heat, and shade it from the rays of the sun till it be fairly struck. By this method, as well as by that of laying, plants may readily be propagated.

Those who are desirous of having cucumbers early, had best sow the seeds about the 20th of October; they may be sown at any time of the year, but the spring and autumn are the best seasons. Cucumber plants may be made to bear fruit plentifully  
from



of November. The heat of the bed was then scarcely strong enough, nor did it become strong enough till about the 27th; the plants therefore made but little progress from the time of their being ridged out till the month of December.

On the 2d of January 1793 I renewed the south side lining, and on the 15th of the same month I renewed the north side lining. The renewal of the south side lining was done in a proper time, but the lining of the north side should have been deferred for a few days longer, for the weather proving cold

from about the middle of March till the middle of September, but from the middle of September till the middle of March their produce will be found small.

Although less dung is required for a brick bed than for a dung bed, yet it is of little use to try to raise early cucumbers without a sufficiency of dung. I have frequently heard complaints, and perhaps not without some degree of truth, by gentlemen's gardeners, especially in the country, that they were much perplexed for want of dung, &c. and that they could have none but when capacious stewards or directors of the husbandry thought fit. Such matters often breed quarrels between the gardener and the bailiff, and it is sometimes difficult for the gentleman to decide which is in fault. I shall only observe that no difficulty of that nature happens with me, because I have the direction both of the business of the farm as well as that of the garden, and I pay equal attention to both; for it gives me pleasure to see each prosper. The method therefore which I pursue with regard to the dung is this: I frequently take the littery dung from among the cow-cribs, and make linings for the melon and cucumber beds of it, and when it is rotten I have it carried to the fields for manure. I often prefer such, especially late in the spring and early in the summer, before horse-dung, because its heat is generally less violent and more durable.

and windy just after, the bed was for a few days rendered too cold, and when the lining came to its full strength of heat, the flues were for a few days rendered rather too warm, and consequently the plants received a small check. Again it is to be seen that on the 20th of November 1792 I covered the flues thinly with mould, and from that time until the 28th of February 1793, the flues remained thinly covered. The reason of keeping the flues thus covered with mould during that time was merely to save a little labour of watering; for while the mould continues moist upon the flues, vapours arise therefrom, and when mould on the flues is wetted, it retains the moisture longer than the tiles of the flues do. But it is the best way during the winter to keep the flues entirely bare of mould, and to water them as occasion may require.

Except the above-mentioned, all the rest of the management held forth in my journal will do, and will in future be a guide and directory to myself, so far as relates to the culture of the cucumber.

To those who may think proper to use my journal as a help in the management of early cucumbers, I would recommend that they should look to it about a week or ten days before, and as long after, the day of the month on which they want directions to go by. This is proper; because, for instance, the work which I had done about the bed on January 15th, 1793, may require to be done on the 8th of January in the year 1794, or perhaps it should be deferred till the 22d or thereabout, as the heat and  
goodness



goodness of the dung, and other unforeseen circumstances, may determine.

After the cucumber bed is set to work, heat and sweet moisture are the two principal agents required for promoting the growth and vigour of the plants ; therefore, if there be a heat kept in the linings strong enough to keep the heat in the centre of the pits of mould fluctuating between 80 and 90 degrees, cold water may be poured on the flues twice or thrice a week. There is no danger of creating damp or impure air in the frames by watering the flues ; for the water is no sooner poured on them, than it runs down their sides, and passes clear off through the drains of the bed ; consequently water being poured upon the flues, gives only a momentary check to the heat of the frames ; for the flues being at all times full of hot steam, when the watering is finished, the heat quickly resumes its former vivacity, and raises a warm vapour in the frames, well adapted for promoting vegetation, and for increasing the growth and invigorating the plant in all its parts.

The mould round about the sides of the pits close against the inner sides of the flues, should be kept nearly on a level with the surface of the flues ; and as it is the mould that joins to the flues which receives the first and greatest heat from the linings, it should continually be kept in a moist state ; for if the mould against the flues be suffered to become dry and husky, air will be generated in the frames disagreeable to the plants.

During the winter and spring, in the mornings, just when the frames are uncovered, I never wish to find the heat of the air in the bed among the plants lower than 70 nor higher than 80 degrees; and during the same time I never wish the heat of the mould in the centre of the pits about six inches below the surface lower than 80 nor higher than 90 degrees. It appears, therefore, that, during the winter and spring months, I wish the medium heat of the air in the frames to be 75 degrees, and the medium heat of the mould to be 85 degrees. I speak now of artificial heat, for when the days are warm, and the sun shines, the heat of the air in the frames is often raised to a much higher degree. Reckoning the heat derived from the sun, the medium heat of the air in the frames may be about 80 degrees; and as the mould in the pits for two or three inches deep is more susceptible of heat and cold than at a greater depth, we may compute its medium heat to be nearly about the same degree as that of the air.

A bed may be built and set to work immediately; the heat of the linings will dry the lime of the joints of the bricks. The evaporation in the frames, from the moist lime of the joints of the brick-work, has no bad effect on the plants; but when a bed is set to work before it be dry and steady, great care must be taken not to injure the brick-work in filling up the pits.



## EXPLANATION OF THE PLAN.

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- a a* Pits for the plants. See the method explained in page 72.
  - b b* Two courses of brick-work: One of them laid under the tiles which cover the flues, and the other laid above them.
  - c c* The flues.
  - d d* Four-inch brick-work carried up full of holes or apertures.
  - e e* Brick on edge, carried up solid to the top of the flues.
  - f f* Four-inch brick-work carried up solid to the top of the flues.
  - g* Drain that carries off the water from the bed.
  - h h* Apertures or holes which are all round the bed, and through which the steam and heat of the linings enter the flues to warm the air in the frames.
  - i i* Small holes or drains; these are at the bottom of each pit, and are to drain the water from the mould of the pits.
  - k k* South side of the frames on which the lights rest.
  - l* Light.
  - m m* Two courses of tiles which cover the flues, the ends of which extend to the outside of the brick-work.
  - n n* Foundation of the bed, which is under ground.
  - o* End of the frames.
- 

I have given the plan of a bed for six lights only, but a bed may be extended to any length or size required by the same model.

I have given the plan on a ball for six lights only  
but a ball may be extended to any length or size re-  
quired by the same model.



# MANAGEMENT

## OF THE

# CUCUMBER PLANTS.

[*S. Th.* stands for Surface Thermometer. *P. Th.* for Plunged Thermometer. *Ther.* for Thermometer in the open air.—The Surface Thermometer stood nearly upright among the plants, and partly exposed to the rays of the sun.]

*Wednesday, October 17, 1792.*

Hours.	S. Th.	P. Th.	Ther.	Wind.
6	—	—	42	S. W. Clear, and a brisk wind.
8	—	—	44	S. W. Ditto.
10	—	—	48	S. W. Sunshine.
12	—	—	53	S. W. Windy, and some drops
2	—	—	54	S. W. Ditto. [of rain fall.
5	—	—	49	S. W. Cloudy, windy.
9	—	—	46	S. W. Ditto.

To-day I had a bed made up of hot dung for a two light frame; it was made about four feet and a half high, and the box and lights were set upon it.

*Thursday, October 18, 1792.*

Hours.	S. Th.	P. Th.	Ther.	Wind.
6	—	—	40	S. W. Clear and a brisk gale of
8	—	—	43	S. W. Ditto. [wind.
10	—	—	49	S. W. Clouds begin to arise.
12	—	—	51	S. W. Cloudy, and a brisk wind.
2	—	—	50	S. W. A light shower of rain.
4	—	—	48	S. W. Cloudy.
5	—	—	44	S. W. Clear, and but little wind.
9	—	—	38	S. W. Ditto.

The lights of the cucumber bed were kept close shut down day and night.

*Friday,*

*Friday, October 19, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	—	—	—	—	32	S. W. Clear, frosty.
8	—	—	—	—	39	S. W. Ditto.
11	—	—	—	—	45	S. W. The sky is overcast.
12	—	—	—	—	50	S. W. Sunshine.
1	—	—	—	—	50	S. W. The sky is overcast.
2	—	—	—	—	49	S. W. The sun appears faintly.
4	—	—	—	—	44	S. W. It rains gently.
9	—	—	—	—	45	S. W. Cloudy.

The heat of the cucumber bed began to rise; a little air was given to it to let the steam pass off.

*Saturday, October 20, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	—	—	—	—	50	S. W. Cloudy, and a brisk wind.
10	—	—	—	—	53	S. Gloomy, the clouds look
12	—	—	—	—	55	S. Cloudy. [rainy.
2	—	—	—	—	58	S. It rains a little.
4	—	—	—	—	56	S. Ditto.
8	—	—	—	—	52	S. It has rained since 4 o'clock.

A strong heat is got up in the cucumber bed; air was continued at it day and night.

*Sunday, October 21, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	—	—	—	—	49	S. E. Clear, the sky red before
10	—	—	—	—	55	S. It rains. [sun-rise.
12	—	—	—	—	55	S. It has rained heavily since
2	—	—	—	—	56	S. Fair, gloomy. [10 o'clock.
5	—	—	—	—	54	S. Light clouds, nearly calm.
9	—	—	—	—	49	S. Ditto.

Air was continued at the cucumber frame day and night to let the steam pass off.



*Monday, October 22, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	—	—	—	—	49	S. W. Flying clouds.
10	—	—	—	—	57	S. W. Windy, scuds of rain.
11	—	—	—	—	59	S. W. Scattered clouds.
2	—	—	—	—	58	S. W. Ditto.
5	—	—	—	—	55	S. W. Showers of rain.
8	—	—	—	—	48	S. W. Clear, and a brisk wind.

In the afternoon I sowed cucumber seed in leaf mould in pans about three inches deep, covered it about half an inch thick, and set them on the surface of the bed. I then set a thermometer in the frame, and at 4 o'clock the mercury stood at 94. The lights were shut close down in the evening for the night.

*Tuesday, October 23, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	83	—	—	—	32	N. W. Clear and frosty.
10	80	—	—	—	39	N. Cloudy.
12	81	—	—	—	46	N. Scattered clouds.
3	79	—	—	—	44	N. Cloudy.
5	77	—	—	—	40	N. Clouds in the horizon.
9	—	—	—	—	37	N. Clear.

The cucumber frame got air at 6 o'clock in the morning, which was continued day and night.

*Wednesday,*

*Wednesday, October 24, 1792.*

Hours.	S. Th.	P. Th.	Ther.	Wind.
6	82	—	42	S. W. Clear, and a brisk gale of
10	79	—	53	S. W. Scattered clouds. [wind.
12	79	—	55	S. W. Cloudy.
2	81	—	53	S. W. The sun shines faintly.
4	80	—	48	S. W. Thin clouds all over the
5	78	—	46	S. W. Ditto. [fky.
9	—	—	42	S. W. Some clouds.

The plants begin to appear, the frame was covered up in the evening with fingle mats, and a little air was left at each light all night.

*Thursday, October 25, 1792.*

Hours.	S. Th.	P. Th.	Ther.	Wind.
6	76	—	37	N. E. Foggy dull morning.
10	75	—	47	N. E. The sun glimpses.
12	76	—	49	N. E. Scattered great clouds.
2	71	—	48	N. E. Cloudy.
5	66	—	44	N. E. Ditto.
9	—	—	43	N. E. Ditto.

The frame was uncovered at fix o'clock in the morning, and covered up in the evening with fingle mats; the surface of the bed was loosened with a dung-fork four or five inches deep; air was continued day and night.

*Friday,*



*Friday, October 26, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	70	—	—	—	42	N. E. Cloudy, and a brisk wind.
8	68	—	—	—	42	N. E. Ditto.
10	69	—	—	—	43	N. E. Some drops of rain fall.
12	71	—	—	—	44	N. E. Ditto.
2	75	—	—	—	44	N. E. Showery.
4	73	—	—	—	41	N. E. Gloomy.
9	—	—	—	—	41	N. E. Ditto.

The frame was uncovered in the morning, and covered in the evening with fingle mats; air was continued day and night.

*Saturday, October 27, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	79	—	—	—	43	E. Cloudy, and a brisk wind.
8	75	—	—	—	48	S. E. Ditto.
10	82	—	—	—	53	S. E. Cloudy, nearly calm.
12	83	—	—	—	57	S. E. Scattered small clouds.
2	82	—	—	—	58	S. Ditto.
4	78	—	—	—	52	S. Ditto.
5	76	—	—	—	49	S. Ditto.
9	—	—	—	—	47	S. Light clouds.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with fingle mats; air was continued day and night; the seed leaves of the plants are fairly expanded.

*Sunday,*

*Sunday, October 28, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	76	—	—	—	50	S. Cloudy, moist; there had been rain in the night.
9	77	—	—	—	55	S. Cloudy, nearly calm.
10	78	—	—	—	58	S. Hazy.
12	80	—	—	—	60	S. Sunshine.
2	82	—	—	—	59	S. Clouds here and there.
4	78	—	—	—	57	S. W. Ditto.
9	—	—	—	—	50	S. W. Ditto.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with fingle mats; air was continued day and night.

*Monday, October 29, 1792.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	—	—	—	—	50	S. W. It rains lightly.
7	75	—	—	—	51	S. W. Fair, cloudy.
10	76	—	—	—	56	S. W. Ditto.
12	80	—	—	—	57	S. W. Ditto.
2	79	—	—	—	58	S. W. Sunshine now and then.
4	77	—	—	—	57	S. W. Ditto.
5	75	—	—	—	56	S. W. Ditto.
9	—	—	—	—	48	S. W. Clear.

The frames were uncovered at 7 o'clock in the morning, and covered up in the evening with fingle mats; air was continued day and night.

*Tuesday,*



*Tuesday, October 30, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	—	44	S.W. Thin clouds cover the
10	79	—	54	S.W. It rains lightly. [sky.
12	78	—	55	S.W. Cloudy.
3	76	—	54	S.W. Ditto.
5	72	—	52	S.W. Light showers.
9	—	—	47	S.W. Cloudy.

The frames were uncovered about 6 o'clock in the morning, and covered in the evening with single mats; air was continued day and night. In the afternoon I potted out the plants in small pots, three plants in each; the surface of the bed was then loosened, and the pots of plants set on its surface.

*Wednesday, October 31, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	82	—	50	S.W. It rains.
10	83	—	53	S.W. Fair, cloudy.
11	86	—	53	S.W. Ditto.
12	88	—	54	S.W. Sunshine.
1	89	—	54	S.W. Ditto.
3	84	—	54	S.W. Scattered clouds.
5	78	—	48	S.W. Ditto.
8	—	—	44	S.W. Clear, and a brisk wind.

The frames were uncovered in the morning, and covered up in the evening with single mats; air was continued day and night.

*Thursday, November 1, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	71	—	44	S.W. Light clouds, which are
10	80	—	50	S.W. Cloudy. [red in the east.
1	74	—	51	S.W. Gloomy.
2	73	—	51	S.W. Ditto. [since 3 o'clock.
4	69	—	49	S.W. Windy; it has rained
5	68	—	49	S.W. It continues to rain.
9	—	—	44	S.W. Windy, and a small rain.

The frame was uncovered at 7 o'clock in the morning, and covered up in the evening with double mats. The surface of the bed was loosened, and water poured into it; the plants were watered in the forenoon with water 75 degrees warm.

*Friday, November 2, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	—	37	S.W. Clear, and a brisk gale of wind.
9	75	—	42	S.W. Sunshine, nearly calm.
11	85	114	47	S.W. Ditto.
12	91	117	49	S.W. Ditto.
2	91	118	48	S.W. Ditto.
4	80	119	45	S.W. Clouds in the horizon.
9	—	—	43	S.W. Clouds here and there.

The frames were uncovered in the morning, and covered up in the evening with double mats. At 10 o'clock in the morning I plunged a thermometer in the surface of the bed among the pots of plants, and sunk its bulb about six inches deep in the dung. Air was continued at the plants day and night.

*Saturday,*



*Saturday, November 3, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	78	122	46	S.W. Light clouds cover the sky.
10	86	122	52	S.W. Clear, and a brisk gale of
12	85	123	54	S.W. Sunshine. [wind.
2	82	124	55	S.W. Ditto.
4	80	124	52	S.W. Clear, and nearly calm.
8	—	—	51	S.W. Cloudy.

The frame was uncovered in the morning about 7 o'clock, and covered up in the evening with double mats. The plants were watered in the morning with water about 80 degrees warm.

*Sunday, November 4, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	74	121	40	S. E. Clear, and nearly calm.
10	82	122	49	S. Sunshine.
12	84	123	53	S. Ditto.
2	84	124	54	S. Ditto.
3	78	124	53	S.W. Ditto.
5	76	124	51	S.W. Clouds here and there.
8	—	—	44	S.W. Light clouds.

The frame was uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night. The plants have their first rough leaves fairly expanded.

*Monday, November 5, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	65	118	32	N. E. Thick fog, white frost.
10	76	118	38	N. E. The sun appears through
11	80	119	43	N. E. Sunshine. [the fog.
12	92	121	48	N. E. Ditto. [east.
2	80	121	47	N. E. Fog comes from the north.
4	79	121	42	N. E. Ditto.
9	—	—	37	N. E. Ditto.

The frame was uncovered about 8 o'clock in the morning, and covered up in the evening with mats. Air was continued day and night.

*Tuesday, November 6, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	62	115	29	S.W. White frost, and a thick fog, which has a disagreeable smell.
10	70	115	37	W. Foggy, nearly calm.
12	78	117	46	W. Hazy.
2	76	118	46	N. Very thick fog.
4	72	119	44	N. E. Ditto.
6	—	—	44	N. E. Ditto.
8	—	—	45	N. E. The fog is more thin.

The frame was uncovered about 8 o'clock in the morning, and covered up in the evening with double mats. In the forenoon the surface of the bed was loosened seven or eight inches deep, and made level; the pots of plants were then set on the surface of the dung in hollows made with the hand, so that the roots of the plants might receive a greater degree of heat than that of the air in the frame, and yet be prevented from an over-heat. Air was continued night and day.

*Wednesday,*



*Wednesday, November 7, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	69	122	43	S.W. High thick clouds.
10	69	122	46	S.W. Ditto.
12	67	122	48	S.W. Gloomy.
2	71	122	48	S.W. Ditto.
4	68	122	48	S.W. Ditto.
9	—	—	46	S.W. Cloudy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night. At noon the plants were watered with water 76 degrees warm.

*Thursday, November 8, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	67	120	46	S.W. Cloudy, calm.
8	66	120	47	S.W. Ditto.
10	68	119	49	S.W. Ditto.
12	75	119	53	S.W. Gloomy.
2	71	120	53	S.W. Ditto.
4	65	120	49	S.W. Ditto.
9	—	—	44	S.W. Cloudy.

The frame was uncovered a little before 8 in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Friday, November 9, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
7	80	121	41	S.	Gloomy.
9	76	121	49	S.	Cloudy, nearly calm.
10	75	121	53	S.	Ditto.
12	76	121	53	S.	Ditto.
2	75	121	52	S.	Ditto.
4	72	121	50	S.	Cloudy, wind brisk.
8	—	—	42	S.W.	Clear, nearly calm.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Saturday, November 10, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
7	70	119	47	S.W.	Cloudy, and a brisk air
9	70	119	47	S.W.	Ditto. [of wind.
11	71	119	53	S.W.	Light clouds.
1	74	119	54	S.W.	The sun shines faintly.
2	70	119	53	S.W.	Cloudy.
4	67	118	50	S.W.	Gloomy.
9	—	—	47	S.W.	Dark.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Sunday,*



*Sunday, November 11, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	67	115	47	S.W. Hazy thick atmosphere.
8	66	115	48	S.W. Ditto.
10	71	115	49	S.W. Gloomy, some drops of
1	73	115	50	S.W. Gloomy. [rain fall.
2	71	116	49	S.W. Ditto.
4	70	116	47	S.W. Ditto.
9	—	—	43	S.W. Light clouds.

The frame was uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Monday, November 12, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	77	116	35	S. E. The sky is covered with light streaky clouds, which are red a good way up the horizon.
9	74	116	39	S. E. Sunshine.
10	81	116	44	S. E. Ditto.
12	85	116	48	S. E. Ditto.
2	74	116	48	S. E. Clouds in the horizon.
7	—	—	41	S. E. High wind, and some
9	—	—	42	S. E. Ditto. [clouds.

The frame was uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night. The second rough leaves of the plants are fairly expanded.

*Tuesday, November 13, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	47	S. E. High wind, and scuds of rain.
7	68	110	48	S. E. There is a rainbow in the north-west.
10	70	110	50	S. E. Flying clouds, windy.
12	74	110	51	S. Cloudy, and nearly calm.
4	68	110	50	S. Clouds here and there.
7	—	—	44	S.W. Clear, and nearly calm.
8	—	—	45	S.W. A heavy rain.

The frame was uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night. To-day old mats were hung round about the sides of the bed to keep it warm.

Having taken the last year's earth from off the bed, and out of the pits, about four inches below the surface of the flues, I had the flues brushed over with thick grout made of lime and water, to make the joints of the flues close, to prevent the steam of the linings from getting into the frames. I then had the pits filled up on a level with the flues with fresh leaf earth, and pressed it gently down to keep it from sinking afterwards. I then made a hill of earth in the middle of each pit, raising each hill about eight or nine inches above the level of the flues; those hills are designed to set the plants in. Having thus done, a lining of dung was made all round the bed, and it was made three feet wide at the foundation, and tapered up to about 28 inches at the top, and it was



was raised near four feet high, and was made of strong stinking wet dung which had lain for some time in a dung hole.

*Wednesday, November 14, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	70	111	44	S.W. High wind, and it rains.
9	69	111	43	S.W. Cloudy and windy.
10	73	111	45	S.W. Scattered clouds.
11	75	111	47	S.W. Scattered flying clouds,
1	70	111	50	S.W. Scuds of rain. [windy.
2	71	111	50	S.W. Windy.
4	64	110	46	S.W. The wind is very high.
8	—	—	46	S.W. Clear and windy.

The frame was uncovered about 8 o'clock in the morning, and covered up in the evening, with about three inches thick of hay and mats. At 1 o'clock I watered the plants with water 78 degrees warm.

*Thursday, November 15, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	70	105	43	S.W. Cloudy, and a brisk gale of wind.
10	68	105	47	S.W. Flying clouds, windy.
12	68	105	48	S.W. Sunshine, windy.
2	69	105	47	S.W. Ditto.
4	63	104	41	W. Clear, and a brisk gale of wind.

The frame was uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was continued day and night.

*Friday,*

*Friday, November 16, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	65	103	35	W. Strong gale of wind, and freaky clouds, which are reddish in colour.
10	69	103	40	W. Sunshine, windy.
12	68	65	43	W. Ditto.
4	64	65	41	W. Windy, and flying clouds.

Between 10 and 11 o'clock I took nine pots of plants out of the seedling frame, and carried them to the fruiting frames, which were set a-going on Tuesday last, and I plunged one pot of plants in each hill. I also removed the thermometers from the seedling frame to the fruiting ones, and in the middle hill of the middle frame close to the pot of plants I sunk the bulb of one of the thermometers about six inches deep in the earth of the hill, and the other thermometer I set at the foot of the hill nearly upright, and rested its bulb on the surface of the earth.

The frames were covered up in the evening with single mats, and a little air left at each light all night.

*Saturday, November 17, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	62	64	25	W. Clear, and a sharp frost.
10	65	64	28	W. Sunshine.
1	79	72	36	W. Ditto.
2	78	72	35	S.W. Ditto.
4	67	71	31	S.W. Clear and calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with single mats.



mats. In the afternoon I turned the plants out of the pots with their balls whole, and I put three plants in each hill, and covered the balls with the earth about an inch thick up the stems of the plants. There was a great steam rising out of the linings about the frames all the day.

*Sunday, November 18, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	65	68	30	S.W. Thin clouds all over the
9	66	68	34	S.W. Ditto. [sky.
10	68	68	40	S.W. Ditto.
1	72	70	43	S.W. Cloudy and nearly calm.
2	70	70	43	S.W. Ditto.
5	61	69	40	S.W. Cloudy, and a brisk wind.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with single mats. Air was continued night and day.

*Monday, November 19, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	72	72	46	S.W. Cloudy and windy.
10	68	71	45	S.W. The sun shines faintly.
12	65	70	48	S.W. Sunshine.
1	66	69	48	S.W. Ditto.
2	67	69	47	W. A shower of rain.
4	65	69	44	W. Cloudy and windy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with single mats. Air was continued day and night.

*Tuesday,*

*Tuesday, November 20, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	66	68	28	S.W. Thin clouds; the sky is red before the sun.
10	66	68	33	S.W. Thin clouds.
1	75	71	39	S.W. The sun shines faintly.
2	72	72	38	S.W. Cloudy, and nearly calm.
4	67	71	36	S.W. Ditto,
6	—	—	34	S.W. Thin clouds.

The frames were uncovered about 8 o'clock in the morning, and covered up about 4 o'clock in the evening with fingle mats.

*Wednesday, November 21, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	64	67	47	S.W. Cloudy, and a brisk gale
10	65	67	50	S.W. Ditto. [of wind,
12	66	67	51	S.W. Cloudy and windy.
1	63	67	52	S.W. Ditto.
2	63	67	51	S.W. Ditto.
5	—	—	49	S.W. Windy, and it rains.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with fingle mats.

*Thursday, November 22, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	59	65	36	S.W. Cloudy and windy.
10	62	65	40	S.W. Ditto.
11	72	68	42	S.W. Sunshine.
1	74	68	43	S.W. Ditto.
2	67	69	40	S.W. Cloudy and windy.
3	65	69	37	S.W. A heavy shower of hail, & high gust of wind.

The frames were uncovered at 8 o'clock in the morning,



morning, and covered up in the evening with about two inches thick of hay and mats. Air was given all day, and a little left at each light all night. I had all the flues covered about an inch thick with leaf earth, and a little laid all round against the insides of the frames.

*Friday, November 23, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	74	75	34	N.W. Thin clouds.
9	67	74	35	N.W. Clear in the west.
10	69	73	37	N.W. Cloudy, and a brisk wind.
12	69	72	41	N.W. Cloudy and windy.
3	64	72	41	N.W. Small shower of rain.
5	—	—	41	N.W. Ditto.
7	—	—	41	N. Showery.

The frames were uncovered at 7 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. There not being a good heat in the linings, to-day I had them turned, and shaken well, and laid up light, so that a better heat might arise in them. I found the dung wet, and a very bad smell in it.

*Saturday, November 24, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	70	74	32	N. E. Some clouds, near calm.
9	69	74	36	N. E. Cloudy.
10	67	73	38	N. E. Ditto.
1	65	72	41	N. E. Ditto.
3	63	71	40	N. E. Ditto, and a cold wind.
4	61	71	40	N. E. Ditto.
9	—	—	39	N. E. Thin clouds.

The frames were uncovered about 8 o'clock in the morning,

morning, and covered up in the evening with hay and mats ; a little air was given in the day-time, but the lights were shut close down in the evening for the night.

*Sunday, November 25, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	39	N. E. Thin clouds, and a brisk
8	72	75	39	N. E. Ditto [gale of wind.
10	68	74	42	N. E. Ditto.
3	66	73	42	N. E. Ditto.
4	65	73	41	N. E. Ditto.
7	—	—	42	N. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats ; but little air was given in the day-time, and the lights were shut close down all night.

*Monday, November 26, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	35	N. E. Cloudy, and a brisk wind.
8	75	78	37	N. E. Gloomy.
10	69	76	38	N. E. Ditto.
12	66	75	39	N. E. Ditto.
2	66	75	39	N. E. Ditto.
4	65	74	40	N. E. Some drops of rain fall.

The frames were uncovered about 8 o'clock in the morning, and covered in the evening with about three inches thick of hay and mats. The linings, being sunk, were raised with fresh long dung.

*Tuesday,*



*Tuesday, November 27, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	82	81	39	N. E. Cloudy, gloomy.
10	71	78	40	N. E. Ditto.
12	71	78	41	N. E. Ditto.
2	70	77	42	N. E. Ditto.
4	67	77	40	N. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. About 11 o'clock I gave the plants a little water 75 degrees warm.

*Wednesday, November 28, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	82	82	35	E. Cloudy, and near calm.
8	82	82	35	E. Ditto.
10	72	81	36	E. Ditto.
12	70	79	38	E. Ditto.
2	67	77	37	E. Some drops of rain fall.
4	66	76	36	E. Hazy.
6	—	—	34	E. A small rain.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. To-day there was a great heat in the linings, and a great steam arising out of them. I had several tubs of water poured on them, and most was given to those parts where the heat was greatest. A little air was given in the day-time, but the lights were shut close all night.

*Thursday,*

*Thursday, November 29, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
8	80	83	29	E. Clear, and near calm.
9	77	82	30	E. Ditto.
10	80	82	33	E. Sunshine.
11	84	83	35	E. Ditto.
12	87	84	38	E. Ditto.
1	90	85	39	E. Ditto.
3	82	85	36	E. Ditto.
4	75	85	32	E. Clear and calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats; air was given in the day-time, and a little left at each light all night.

*Friday, November 30, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	35	S. E. Foggy and near calm.
8	82	85	35	S. E. Ditto.
10	69	84	35	S. E. Ditto.
12	68	80	36	S. E. Ditto.
2	68	80	35	S. E. Ditto.
4	66	80	35	S. E. Ditto.
9	—	—	29	S. E. Foggy and dark.

The frames were uncovered about 8 o'clock in the morning, and covered at 4 in the evening with hay and mats. The linings, being sunk, were raised; air was given in the day-time, and a little left at each light all night.

*Saturday,*



*Saturday, December 1, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
8	68	77	32	S. E. Cloudy, and a brisk wind.
10	66	77	34	S. E. Ditto.
12	64	76	32	S. E. Ditto.
2	64	76	32	S. E. Ditto.
4	62	77	31	S. E. Gloomy.
6	—	—	30	S. E. Cloudy.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up about 4 in the evening with about three inches thick of hay and mats. Air was continued day and night.

*Sunday, December 2, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
8	70	80	34	N. E. Cloudy, and a brisk gale
10	66	80	35	N. E. Ditto. } of wind.
12	65	81	36	N. E. Ditto.
2	64	81	36	N. E. Ditto.
4	63	81	35	N. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. The plunged thermometer is now sunk in the pit about four inches from the north side flue, and its bulb is about six inches below the surface of the earth.

*Monday, December 3, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	33	N. E. Thick foggy clouds, near-
8	70	84	34	N. E. Ditto. [ly calm.
10	70	84	35	W. Ditto.
12	64	83	34	W. Cloudy, and a brisk wind.
2	60	82	32	W. Ditto.
4	59	82	30	W. Ditto.
6	—	—	28	W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was given in the day-time, but the lights were shut close down all night.

*Tuesday, December 4, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	76	85	35	S.W. Foggy, and nearly calm.
9	71	85	36	S.W. Ditto.
10	70	85	37	S.W. Cloudy, and a brisk wind.
12	67	85	42	S.W. Ditto.
3	63	84	42	S.W. Ditto.
4	60	84	44	S.W. It rains gently. [high.
8	—	—	45	S.W. It rains, and the wind is

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats.

*Wednesday,*



*Wednesday, December 5, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	50	W. Cloudy, windy; there had been rain in the night.
8	72	84	50	W. Cloudy and windy.
10	66	84	50	W. Ditto.
12	65	84	51	W. Ditto.
2	63	83	52	W. Ditto.
4	64	83	52	W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was given in the day-time, but the lights were shut close down all night.

*Thursday, December 6, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	42	S. E. Cloudy, and but little wind.
8	83	89	43	S. W. Ditto.
10	69	87	46	S. W. Cloudy and windy.
12	67	86	48	S. W. Scattered clouds, windy.
2	63	86	48	S. W. Cloudy and windy.
4	65	85	47	S. W. Ditto.
8	—	—	44	S. W. Clear and windy.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up about 4 in the evening with about three inches thick of hay and mats. The linings, being sunk, were raised with fresh dung. Air was admitted all day, and a little left at each light all night.

*Friday, December 7, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	35	N.W. Windy, and some clouds.
8	70	86	36	N.W. Ditto.
12	74	86	37	N.W. Sunshine.
2	69	86	36	N.W. Ditto.
4	64	86	31	N.W. Clear, and a brisk wind.
7	—	—	27	N.W. Clear, and nearly calm.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up about 4 o'clock in the evening with hay and mats. The linings were examined, and put close to the sides of the frames. The lights were shut close down for about two hours in the middle of the day. A little air was left at each light all night. To-day I went over the plants and stopped them, and with my hand I stirred the mould on the flues, and also about the foot of the hills all round about.

*Saturday, December 8, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	27	W. Clear, calm; a little hail lies on the earth, which had fallen in the night.
7	—	—	26	W. Ditto.
8	76	88	27	W. Clear, and nearly calm.
9	72	88	28	W. Ditto.
10	74	88	30	W. Sunshine.
12	75	88	35	S.W. Ditto.
3	76	88	34	S.W. Ditto.
4	69	88	32	S.W. Streaky clouds.
9	—	—	35	S.W. Ditto.

The frames were uncovered about 8 o'clock in the morning,



morning, and covered up about 4 in the evening with about two inches thick of hay and mats. Air was given all day, and a little left at each light during the night.

*Sunday, December 9, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	39	W. Cloudy, and a high wind.
9	72	89	43	W. Ditto.
10	70	89	45	W. Ditto.
11	67	88	46	W. Ditto.
1	64	87	47	W. Ditto.
3	67	87	47	W. Some drops of rain fall.
4	—	—	47	W. A small drifting rain.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with hay and mats. The lights were shut close down about 1 o'clock, and were let remain so all night.

*Monday, December 10, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	49	W. Windy and cloudy.
8	80	93	50	W. Ditto.
10	70	92	51	W. Ditto.
12	67	91	52	W. High wind, and light clouds.
2	65	90	52	W. Ditto.
4	63	90	51	W. Ditto.
8	—	—	49	W. Clear and windy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. To-day I went over the plants, and picked up the weeds that were growing among them, and stirred with my hand

the earth on the flues. The linings were examined, and put close to the sides of the frames.

*Tuesday, December 11, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	41	W. Clear, and a strong gale of wind.
7	—	—	40	W. The wind is fallen a little.
8	72	91	41	W. Streaky clouds.
10	69	91	43	W. The sun glimmers.
12	68	90	44	W. Cloudy and windy.
2	63	89	42	W. The sun shines faintly.
4	62	88	40	W. Clear and windy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. A little air was continued at each light day and night.

*Wednesday, December 12, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	31	W. Streaky clouds, and but little wind.
8	78	92	32	W. The sun appears faintly.
10	69	91	35	W. Ditto.
12	68	90	36	N.W. Cloudy, and a cold wind.
3	60	88	36	N.W. Ditto.
4	62	88	36	N.W. Ditto.
7	—	—	36	N.W. It rains.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. About noon I got water warmed to about 80 degrees, and therewith I watered those parts of the flues that appeared dry, and poured some of it against



against the sides of the frames all round. I then laid a little more earth on the flues close against the sides of the frames.

*Thursday, December 13, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	39	N.W. It rains gently.
9	74	90	36	N. E. Ditto.
10	68	89	36	N. E. Ditto.
12	68	88	37	N. E. A drizzling rain.
2	67	88	37	N. E. Ditto.
4	65	87	36	N. E. Ditto.

The frames were uncovered a little before 9 o'clock in the morning, and covered up in the evening with hay and mats. The linings, being funk, were raised. Air was given day and night.

*Friday, December 14, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	36	N.W. Cloudy and windy.
9	77	90	40	N.W. Ditto.
10	70	90	44	N.W. Ditto.
12	74	90	49	N.W. Ditto.
2	72	90	48	N.W. Ditto.
4	70	89	47	N.W. Ditto.
7	—	—	44	N.W. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with about three inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, and picked the weeds out of the mould; but little air was given in the day-time, and in the evening the lights were shut close down for the night.

*Saturday, December 15, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	41	W. Cloudy, and a brisk gale of
8	85	94	42	W. Ditto. [wind,
10	73	92	44	W. The sun glimpses.
11	71	90	46	W. Cloudy.
1	73	89	48	W. Ditto.
3	69	89	47	W. Ditto.
4	68	89	47	W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was given all day, and the lights were shut down in the evening for the night.

*Sunday, December 16, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	38	S. E. Thick clouds, near calm.
8	88	95	38	E. Ditto.
10	74	94	40	E. Ditto.
11	73	94	41	E. Gloomy.
1	72	93	43	E. Ditto.
3	70	92	42	E. Ditto.
4	68	91	41	E. Ditto.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up in the evening with hay and mats. Air was given in the middle of the day, but none was left all night.

*Monday,*



*Monday, December 17, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	40	S.W. Thin clouds, nearly calm,
9	84	94	41	S.W. Ditto.
10	74	93	42	S.W. Ditto.
12	70	91	45	S.W. Cloudy, and a brisk wind,
2	65	89	45	S.W. Ditto.
4	63	89	43	S.W. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with four inches thick of hay and mats. To-day I watered the flues, and poured some water all round against the sides of the frames to wash and sweeten them; the water that I used was about 80 degrees warm. The linings, being sunk, were raised with fresh dung. Air was given in the day-time, and a little left at each light during the night.

*Tuesday, December 18, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	45	S.W. Flying clouds and standing ones above them, and which are of a reddish colour.
9	77	90	46	S.W. Cloudy, and a brisk wind,
10	70	90	48	S.W. Cloudy and windy.
12	67	89	50	S.W. Ditto.
2	66	89	51	S.W. Ditto.
4	65	88	52	S.W. Ditto.
8	—	—	50	S.W. High wind, and cloudy.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with hay and mats. Air was admitted in the day-time, but the lights were shut close down all night.

*Wednesday,*

*Wednesday, December 19, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	49	S.W. Clear, and a high wind.
8	—	—	47	S.W. Some clouds, windy.
9	81	93	48	S.W. Ditto.
10	67	92	49	S.W. Ditto.
12	73	91	48	S.W. Sunshine, windy.
2	69	90	47	W. Ditto.
4	67	90	45	W. Windy, and some clouds.

The frames were uncovered about 9 o'clock in the morning, and covered up at 4 in the evening with about four inches thick of hay and mats. Air was continued all day, and a little left at each light all night. The linings were examined, and put close to the sides of the frames.

*Thursday, December 20, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	47	S.W. Cloudy, and a high wind.
9	70	90	49	S.W. Ditto.
10	67	90	51	S.W. Ditto.
12	66	89	52	S.W. There is a small drifting
2	67	88	48	S.W. Squally showers. [rain.
4	65	88	47	S.W. Windy and cloudy.

The frames were uncovered at 9 o'clock in the morning, and covered up at 4 in the evening with about three inches thick of hay and mats. The linings, being funk, were raised with fresh hot dung. Air was given day and night.

*Friday,*



*Friday, December 21, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	W. Clear and windy.
9	58	85	35	W. Ditto.
10	59	84	36	W. Sunshine, and a high wind,
12	65	85	38	W. Ditto.
4	66	86	37	W. Cloudy and windy.
9	—	—	32	W. Clear and windy.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with hay and mats. Air was continued all the day, but the lights were shut close down in the evening for the night. The plants were gone over, and stopped, and the weeds picked out. The plants in the west frame are the best, and they show their fruit very strong.

*Saturday, December 22, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	42	S.W. Cloudy and windy.
9	80	93	42	S.W. Ditto.
10	72	92	43	S.W. Ditto.
12	67	90	42	S.W. Cloudy, and a high wind.
2	64	90	40	S.W. A heavy shower of rain.
4	60	89	38	S.W. Showery, and a high wind.
6	—	—	36	S.W. Clear, the wind is high.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The linings, being sunk, were raised with fresh dung just come out of the stables. Air was admitted in the day-time, and a little left at each light during the night.

*Sunday,*

*Sunday, December 23, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	32	N.W. Clear, and a strong gale
9	72	90	31	N.W. Ditto. [of wind.
10	69	90	31	N.W. Sunshine, windy.
11	74	90	30	N.W. Ditto.
1	77	90	31	N.W. Some thin clouds.
3	67	89	29	N.W. Cloudy, windy, cold.
4	68	89	28	N.W. Ditto.
6	—	—	27	N.W. Ditto.
9	—	—	26	N.W. Ditto.

The frames were uncovered between 9 and 10 o'clock in the morning, and covered up in the evening with hay and mats.

*Monday, December 24, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	N.W. Cloudy, and a brisk gale
8	—	—	28	N.W. Ditto. [of wind.
9	77	92	29	N.W. Ditto.
10	69	91	30	N.W. The wind is fallen,
12	50	87	30	W. The sun glimmers.
2	63	87	31	W. Thin clouds, near calm.
4	62	87	29	W. Clear, and nearly calm.
8	—	—	26	W. Thin clouds.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about five inches thick of hay and mats.

About noon I went over the frames, and with my hand I stirred the earth on the flues, and where I found them very dry, there I strewed a little fresh moist mould. Air was left at each light during the night.

*Tuesday,*



*Tuesday, December 25, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	S.W. Clear, and nearly calm. A shower of snow had fallen in the night.
7	—	—	28	S.W. Clear, and nearly calm.
9	78	92	29	S.W. Sunshine.
10	74	91	29	S.W. Ditto.
12	75	91	34	S.W. Thin clouds.
2	71	90	35	S.W. Cloudy, and nearly calm.
4	71	90	32	S.W. Ditto.
6	—	—	32	S.W. Ditto.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with hay four inches thick, and mats. Some air was admitted in the day-time, and a little left all the night.

*Wednesday, December 26, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	38	W. Cloudy, and a brisk wind; there had been rain in the night.
9	65	89	34	W. Gloomy.
10	64	89	33	N.W. Showers of sleet.
12	63	88	32	N.W. A heavy fall of wet snow.
2	59	87	31	N.W. The snow continues to
3	58	87	30	N.W. Ditto. [fall heavily.
8	—	—	32	N.W. Windy, and some rain falls, and the snow is nearly melted.

The frames were uncovered about 9 o'clock in the morning, and covered up a little past 3 o'clock in the afternoon with about five inches thick of hay and mats.

mats. The lights were kept close shut down all the day, and remained so during the night.

*Thursday, December 27, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	32	N.W. Cloudy, and but little wind.
9	80	92	33	N.W. Cloudy, and nearly calm.
10	69	91	34	N.W. Ditto.
12	70	90	36	N.W. Ditto.
2	70	90	35	N.W. Clouds here and there.
4	68	90	33	N.W. Clear, and a brisk wind.
7	—	—	28	N.W. Ditto.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was admitted at 9 o'clock, and continued all day, and a little left all night. To-day I laid some earth round the hills, and the tops of them I covered with earth about an inch thick, and made it close to the stems of the plants. I then stopped the plants, and laid their vines out regular, and fixed them down to the hills with pegs.

*Friday, December 28, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	W. Clear, and a brisk wind.
9	71	90	33	W. Ditto.
10	67	89	34	W. Sunshine.
12	70	89	36	W. Ditto.
2	68	88	38	N.W. Flying clouds.
4	64	88	37	N.W. Ditto. [the moon,
8	—	—	34	N.W. There is a circle about

The frames were uncovered about 9 o'clock in the morning,



morning, and covered up at 4 in the evening with hay and mats. The linings, being sunk, were raised with fresh dung. Air was admitted day and night.

*Saturday, December 29, 1792.*

Hours. S.Th. P.Th. Ther. Wind.

6 — — 35 S. Cloudy ; there had been rain in the night.

9 76 92 38 S.W. Cloudy.

10 71 91 39 S.W. Ditto.

12 73 90 45 S.W. Gloomy.

2 71 90 46 S.W. Ditto.

4 69 89 45 S.W. Ditto.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. In the afternoon a layer of fresh dung was laid on the linings. Air was continued at each light day and night.

*Sunday, December 30, 1792.*

Hours. S.Th. P.Th. Ther. Wind.

6 — — 44 N.W. It rains.

9 76 93 42 N.W. Ditto.

10 71 92 43 N.W. Fair, cloudy.

1 77 92 43 W. Sunshine.

2 75 92 42 W. Cloudy.

4 70 92 39 W. Clouds here and there.

8 — — 30 W. Clear, and near calm.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with hay and mats.

*Monday,*

*Monday, December 31, 1792.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	23	W.	Clear and calm.
7	—	—	24	W.	Ditto.
8	—	—	22	W.	Clear, and a brisk air of
9	80	94	24	W.	Ditto. [wind.
10	72	93	24	W.	Thin clouds cover the sky.
12	75	93	28	W.	Sunshine.
1	72	92	29	W.	A thick fog.
2	69	91	28	W.	Ditto.
4	65	91	27	W.	Ditto.
8	—	—	21	W.	The thick fog continues, and it has a bad smell.

The frames were uncovered about 9 o'clock in the morning, and covered up at 4 in the evening with about five inches thick of hay and mats. To-day I went over the plants, and stopped them, and nipped off some of the male blossoms where they were in clusters. To-day I had some dung put together in a heap to heat, to make a lining for the south side of the bed. But little air was given in the day-time, and the lights were shut close down all night.

*Tuesday, January 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	30	S.E.	Cloudy, and a brisk wind.
9	80	94	31	S.E.	Ditto.
10	71	93	34	S.	Ditto.
12	63	91	34	S.	It rains a little. —
2	63	90	33	S.	Fair and cloudy.
4	60	89	33	S.	Flying thick clouds, but
10	—	—	32	S.E.	Cloudy. [little wind.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with  
five



five inches thick of hay and mats. Air was admitted in the day-time, and a little left at each light during the night.

*Wednesday, January 2, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	32	N.W. Cloudy, there had been rain in the night; the air is full of moisture.
9	74	93	31	N.W. Foggy, and snow falls.
10	72	93	31	N.W. Ditto.
12	70	91	32	N.W. Cloudy, and a brisk wind.
2	67	90	32	N.W. Cloudy, and nearly calm.
4	66	89	34	N.W. Ditto.
9	—	—	32	N. E. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about five inches thick of hay and mats. To-day I had a fresh lining put to the south side of the bed, in doing which, I had the fresh dung that was on the top of the old lining laid aside, and all the exhausted dung taken away; and the dung that had been on the top of the lining, and was not exhausted, that I had worked into the foundation of the new lining, and then had fresh dung laid above it. The lining was made about three feet wide at the foundation, and tapered up to about twenty-eight inches at the top.

*Thursday, January 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	27	W. A thick fog.
9	76	89	27	W. Ditto.
10	70	88	28	W. Ditto.
12	67	87	30	W. Ditto.
4	68	87	31	W. Ditto.
8	—	—	30	W. Clear and calm.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was continued day and night. The lining that was made up yesterday, being sunk, was raised with fresh dung. I went over the plants, and stopped them, and picked some male blossoms off.

*Friday, January 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	E. Cloudy, and a brisk wind.
9	76	92	29	E. Heavy clouds come from the east.
10	70	91	30	E. Cloudy, and but little wind.
12	68	90	33	E. Ditto.
2	64	90	32	E. Ditto.
3	63	90	30	E. Ditto.
4	62	89	28	E. Ditto.
8	—	—	24	E. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with four inches thick of hay and mats. The linings were examined, and put close to the sides of the frames, and the south side lining, being sunk, was raised. A great steam kept rising out of it all day.

*Saturday,*



*Saturday, January 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	29	S.	Cloudy and windy.
9	70	90	32	S.	Ditto.
10	63	90	33	S.	Ditto.
12	67	90	35	S.	It rains.
2	69	90	36	S.W.	Ditto.
4	67	90	38	S.W.	Ditto.
7	—	—	38	S.W.	Clear, and a brisk wind.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with three inches thick of hay and mats. Air was admitted in the day-time, and a little left at each light during the night.

*Sunday, January 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	30	W.	Clear, and a brisk wind.
9	77	94	31	W.	Ditto.
10	71	94	32	W.	Ditto.
11	73	94	34	W.	Sunshine.
12	76	94	38	W.	Scattered clouds.
2	76	94	37	N.W.	Sunshine.
4	70	93	34	N.W.	Clear, and a brisk wind.
9	—	—	27	N.W.	Clear, and near calm.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with five inches thick of hay and mats. Air was given in the day-time, but the lights were shut close down all night.

*Monday, January 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	22	W. Clear and calm.
8	—	—	23	W. The sky is overcast with thin
9	82	97	26	W. Thin clouds. [clouds.]
10	74	96	33	W. Ditto.
12	68	95	38	S. A sprinkling of rain.
2	68	94	37	S. Cloudy and windy.
4	67	94	37	S. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was admitted at 9 o'clock, and continued all day, and some left all night. The linings were raised with fresh dung. In the afternoon I went over the plants, and stopped them, and thinned out some of the oldest leaves, and pegged down the shoots of the plants, and picked off the dead male blossoms.

*Tuesday, January 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	46	S.W. It rains, and there had been a great deal of rain in the night.
8	—	—	44	S.W. Fair and cloudy.
9	78	95	45	S.W. Scattered clouds, and a
10	74	95	46	S.W. Ditto. [brisk wind.]
12	75	95	45	N.W. Ditto.
1	76	95	44	N.W. Sunshine.
2	75	95	44	N.W. Ditto.
4	70	94	40	N.W. Clear, and a brisk wind.
7	—	—	32	N.W. Ditto.

The frames were uncovered a little before 9 o'clock in



in the morning, and covered up in the evening with about three inches thick of hay and mats. Air was admitted day and night.

*Wednesday, January 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	26	N.W. Clear, and nearly calm.
9	80	96	28	N.W. Ditto.
10	75	96	30	N.W. Sunshine.
11	82	96	33	N.W. Ditto.
1	82	96	36	N.W. Ditto.
2	82	97	37	S. E. The sun shines faintly.
4	75	97	35	S. E. Thin clouds cover the
7	—	—	34	S. E. Ditto. [sky.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. Air was continued all the day, and a little left at each light during the night. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set some fruit that were in blossom. The linings were examined, and put close to the sides of the frames.

*Thursday, January 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	37	S. Windy, and thick flying clouds.
9	70	95	40	S. Ditto, and a small rain.
10	68	95	42	S. Ditto. [clouds.
12	67	95	46	S. Fair, and flying great
2	69	95	48	S.W. Ditto.
4	67	95	46	S.W. Clear, and a brisk wind.
7	—	—	42	S.W. Ditto.

The frames were uncovered at 9 o'clock in the morning,

morning, and covered up at 4 in the evening with about two inches thick of hay and mats. Air was continued day and night.

*Friday, January 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S.W. Cloudy; there had been rain in the night.
9	75	96	42	S.W. Cloudy, and a brisk gale
10	74	95	43	S.W. Sunshine. [of wind.
12	60	80	43	S.W. Clouds here and there.
2	56	74	43	S.W. Sunshine.
4	54	75	42	S. It begins to rain, and the wind is high. [rain.
5	—	—	42	S. High wind, and some
7	—	—	42	S. Fair, cloudy, windy.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. To-day I laid some earth round each hill, and covered the surface of the hills among the plants about half an inch thick with fine sifted leaf earth. I then stopped the plants, thinned their leaves, and laid the shoots out regular on the hills, and pegged them down to the earth with little wooden pegs, and I removed the plunged thermometer, and set it in the hill about ten inches north from the stems of the plants, with its bulb six inches below the surface of the earth; I made the earth close to its tube to prevent the external air in the bed from penetrating too quickly to the bulb; I set the other thermometer by it with its bulb on the surface of the earth of the hill, and I stuck a stick into



into the hill for the surface thermometer to lean against.

*Saturday, January 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	36	S. Cloudy, and a high wind; there had much rain in the night. [high.
8	—	—	38	S.W. It rains, and the wind is
9	69	80	39	S.W. It rains heavily, gloomy.
10	64	80	38	S.W. Fair, cloudy.
12	68	80	40	S.W. Sunshine, windy,
2	70	80	40	S.W. Ditto.
4	67	80	38	S.W. Clear, windy.
8	—	—	35	W. Cloudy, windy.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The linings were raised with fresh dung,

*Sunday, January 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	S.W. Clear, and near calm.
8	—	—	32	S.W. Clouds here and there.
9	75	84	33	S.W. Sunshine.
10	72	84	35	S. Ditto.
11	75	85	36	S. Ditto.
1	85	87	42	S. Ditto.
2	85	87	42	S. Clouds here and there.
4	73	86	38	S. Ditto.
8	—	—	34	S. E. Clear, and a brisk wind.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with hay and mats.

*Monday, January 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	32	E. Foggy.
9	78	87	35	E. Showery.
10	70	86	36	N. E. Ditto.
12	64	84	38	N. E. Cloudy, and a brisk wind.
2	67	83	38	N. E. Ditto.
4	65	83	38	N. E. Ditto. [wind.
7	—	—	33	N. E. Clear, and a brisk gale of

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was given day and night. In the forenoon I went over the plants, and stopped them, thinned their leaves, and laid the vines out regular,

*Tuesday, January 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	32	N. E. Cloudy and windy.
8	—	—	33	N. E. Ditto.
9	80	88	33	N. E. Ditto.
10	68	86	34	N. E. Ditto.
12	65	85	35	N. E. A little snow falls.
2	60	83	34	N. E. Ditto.
4	57	81	33	N. E. Windy, cloudy, gloomy.
7	—	—	32	N. E. Windy,

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Air was continued day and night. To-day I had the fresh dung taken from off the north side lining, and laid aside, and then the rotten part in the bottom carried away, and



and the unexhausted dung that was on the top worked into the bottom part, and the deficiency made up with fresh dung. The lining was made near three feet wide in the foundation, and tapered up to about twenty-six inches at the top.

*Wednesday, January 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	N. E. Cloudy, cold, and windy.
8	—	—	30	N. E. Ditto.
9	58	81	30	N. E. Ditto.
10	55	81	31	N. E. Ditto.
12	56	80	31	N. E. Ditto.
2	55	80	31	N. E. Ditto.
4	54	79	31	N. E. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 o'clock with about four inches thick of hay and mats. The linings were examined, and put close to the sides of the frames. Air was given in the day-time, and a little left at each light all night. As the weather is so cold and windy, it would have been better not to have changed the back lining yesterday, but to have deferred it for some days longer, by which the heat would have been kept more steady, which is a great advantage, especially in windy weather.

*Thursday,*

*Thursday, January 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	N. Foggy.
8	—	—	32	N. Ditto.
9	78	81	33	N. E. It rains.
10	68	81	35	N. E. Cloudy, and a brisk gale
12	68	80	35	N. E. Ditto. [of wind.
2	61	79	31	N. E. Ditto.
4	57	79	30	N. E. Ditto.
10	—	—	29	N. E. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up about 4 in the evening with hay and mats ; but little air was given in the day-time, and the lights were shut close down all night.

*Friday, January 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	N. E. Cloudy, and windy,
9	70	81	30	N. E. Ditto.
10	63	80	31	N. E. Ditto.
11	67	80	32	N. E. Scattered clouds.
12	70	80	32	N. E. Ditto.
2	72	81	31	N. E. Sunshine.
3	69	82	31	N. E. Clouds here and there.
4	63	81	29	N. E. Clear, and the wind is fallen.
8	—	—	27	N. E. Clear, and near calm.
10	—	—	22	N. E. Ditto.

The frames were uncovered a little before 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats ; but little air was given in the day-time, and the lights were shut close down in the evening for the night.

*Saturday,*



*Saturday, January 19, 1793.*

Heurs.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	19	N. E. Clear, calm, and a white
8	—	—	19	N. E. Ditto. [frost,
9	72	82	20	N. E. Sunshine,
10	68	82	22	N. E. Ditto,
11	72	82	25	N. E. Ditto.
12	76	83	26	N.W. Ditto.
1	78	84	27	N.W. Ditto.
2	75	85	27	N.W. The sun shines faintly,
4	68	85	26	N.W. Ditto.
5	—	—	26	N.W. There is a thick fog, which has a disagree- able smell,
8	—	—	24	N.W. Foggy.
10	—	—	25	N.W. The fog is got high.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. The lights were kept close shut down till 1 o'clock, when a little air was admitted, and continued till 3 o'clock, and then the lights were shut down again for the night. The linings were raised as high as the surface of the mould in the frames with hot dung.

About 3 o'clock in the afternoon, by trial, I found the water underneath the ice in the pond to raise the thermometer to 35, and that running out of a pipe into the pond, raised it to 39, and the spring from whence the said water came, raised it to 45 degrees; so that the water, by running about a quarter of a mile through the pipe in the earth, had become six degrees colder than when in the spring.

*Sunday,*

*Sunday, January 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	28	W. The air is thick, and a
9	85	90	29	W. Ditto. [white frost.
10	78	89	30	W. Ditto.
11	75	89	31	W. Ditto.
1	73	88	32	W. Gloomy.
2	71	88	32	W. Ditto.
4	68	87	31	W. Ditto.
6	—	—	29	W. Cloudy, and but little wind.

The frames were uncovered about 9 o'clock in the morning, and covered up at 4 in the evening with about four inches thick of hay and mats. Air was given at 10 o'clock, and continued all the day, and a little left at each light all night.

*Monday, January 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	S.W. Thin clouds, near calm.
8	—	—	28	S.W. Ditto.
9	86	92	29	S.W. Ditto.
10	78	91	31	S.W. Ditto.
12	73	90	36	S.W. Ditto.
2	73	89	36	S.W. Cloudy, and a brisk wind,
4	69	88	34	S.W. Ditto.
7	—	—	29	S.W. Clear, and nearly calm.
9	—	—	27	S.W. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Air was continued all day, and a little left all night. The north side lining, being sunk, was raised with fresh dung.

In



In the forenoon I went over the plants, stopped them, thinned their leaves, and put pieces of glass under some set fruit.

*Tuesday, January 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	S.W. Thin clouds, nearly calm.
9	82	92	33	S.W. Gloomy.
10	76	91	35	S.W. Ditto.
12	76	90	39	S.W. Ditto.
2	67	90	38	S.W. Ditto.
4	68	89	35	S.W. Ditto.
7	—	—	33	S.W. Ditto.

The frames were uncovered a little before 9 o'clock in the morning, and covered up about 4 in the evening with hay and mats. Air was given in the day-time, and a little left at each light all night. To-day the linings were well watered

*Wednesday, January 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	S.W. Dull cloudy morning.
9	78	91	33	S.W. Cloudy, and but little
10	73	90	34	S.W. Ditto. [wind.]
12	68	88	37	S.W. Ditto.
4	62	87	33	S.W. Ditto.
8	—	—	34	S.W. Ditto.

The frames were uncovered at 9 o'clock, and covered up in the evening with about two inches thick of hay and mats. At noon I went over the plants and stopped them, and thinned their leaves, and laid out their vines regularly. I also stirred here and there the

the mould on the flues, and on those parts where I found the mould dry, there I strewed on some that was moist. Air was continued night and day.

*Thursday, January 24, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	36	S.W. Cloudy, and near calm.
8	79	90	38	S.W. Ditto.
10	72	89	41	S.W. It begins to rain.
12	67	87	42	S.W. It rains gently.
2	66	87	42	S.W. Small rain.
4	66	87	42	S.W. Ditto.
7	—	—	42	S.W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Air was given in the day-time, and a little left at each light all night. The north side lining was very hot, and a great steam rising out of it, therefore water was poured upon it plentifully.

*Friday, January 25, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	36	N.E. It rains, and there had been much rain in the night.
8	72	88	36	N.E. It rains lightly.
10	67	87	37	N.E. Fair, gloomy.
12	68	86	38	N.E. Ditto.
2	67	86	37	N.E. Ditto.
4	69	86	35	N.E. Ditto.
10	—	—	28	N.E. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning,



morning, and covered up between 4 and 5 in the evening with hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, and those fruit that I found in blossom I set. A little air was continued day and night. The linings, being sunk, were raised with dung fresh from the stables.

*Saturday, January 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	22	N. Clear, and nearly calm.
9	80	90	24	N.E. Ditto.
10	80	90	26	S.E. Sunshine.
12	83	91	31	S.E. Ditto.
1	76	90	34	S.E. Cloudy.
3	72	90	33	S.E. Ditto.
4	68	89	30	S.E. Ditto.
7	—	—	25	S.E. Clear, and nearly calm.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with four inches thick of hay and mats. About noon I went over the plants, and stopped them, and set the fruit that were in blossom. Air was continued day and night at every light.

*Sunday, January 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	28	S.W. Cloudy, gloomy.
9	79	92	32	S.W. Snow falls.
10	73	91	33	S.W. Cloudy.
11	72	90	35	S.W. Thin clouds.
1	76	90	38	S.W. The sun glimmers.
2	77	91	39	S.W. Cloudy.
4	68	90	37	W. Ditto.
9	—	—	33	W. Ditto.

The frames were uncovered about 9 o'clock in the morning,

morning, and covered up in the evening with hay and mats; air was given in the day-time, but the lights were shut close down all night.

*Monday, January 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	36	W. Cloudy and gloomy.
9	84	94	38	W. Ditto.
10	80	93	40	W. Thin clouds.
12	85	93	45	W. Bright sunshine.
1	88	94	47	W. Ditto.
2	89	94	48	W. Ditto.
4	77	93	44	W. Small clouds here and there.

The frames were uncovered a little before 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was given at 9 o'clock in the morning, and continued all day, and a little left at every light all night.

To-day I mixed together the moist and dry mould that lay on the flues, and laid it round the sides of the hills; and I laid about an inch thick of it among the stems and vines of the plants; and having made the surface of the hills level, I trained the plants out carefully, and pegged them down here and there at their joints, lightly covering those part with mould, in order that they might strike root, and thereby strengthen themselves. The hills now on all sides cover about three inches of the surface of the flues, and the other parts of the flues are left nearly bare of mould.

*Tuesday,*



*Tuesday, January 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	37	S.W. Cloudy, and a brisk wind.
9	72	92	39	S.W. Ditto.
10	74	92	42	S.W. Ditto.
1	76	91	50	S.W. The sun glimmers.
2	70	91	47	S.W. Cloudy, and it rains a little.
4	70	91	46	S.W. Cloudy, and a brisk gale
7	—	—	45	S.W. Ditto. [of wind.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with three inches thick of hay and mats. Air was continued day and night. About 11 o'clock I gave the plants a moderate watering, in doing which I gave most round the sides of the hills close to the flues, for there the heat is always greatest. I also watered the plants all over their leaves, and poured some on the flues and against the sides of the frames, to wash and sweeten them. The water was 76 degrees warm.

*Wednesday, January 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	37	W. Cloudy, and a brisk wind.
9	77	92	35	N.W. Ditto.
10	70	91	36	N.W. Ditto.
11	72	91	37	N.W. Sunshine.
12	70	91	37	W. Ditto.
2	68	91	38	W. Windy, and some clouds.
3	71	91	39	W. Ditto.
4	64	90	37	W. Clouds here and there.
8	—	—	35	W. Cloudy, and a brisk gale [of wind.

The frames were uncovered at 9 o'clock in the morning,

morning, and covered up in the evening with about three inches thick of hay and mats. Air was given day and night. At noon I went over the plants, and stopped them, thinned their leaves, and set the fruit in blossom. To-day I began to cut fruit.

*Thursday, January 31, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	W. Clear, and a brisk gale of
9	70	88	32	W. Ditto. [wind.
10	72	88	35	W. Sunshine.
12	75	89	42	W. The air is overcast with
2	65	88	42	W. Cloudy. [thin clouds.
4	70	88	40	W. Ditto.
7	—	—	37	W. Ditto.
10	—	—	39	W. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up between 4 and 5 in the evening with about four inches thick of hay and mats. The linings, being sunk, were raised with fresh dung. Air was given in the day-time, but the lights were shut down close all night. I went over the plants and stopped them, and set the fruit in blossom, and nipped off several male and female blossoms where they were too thick.

*Friday,*



*Friday, February 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	38	S. It rains lightly.
9	84	91	42	S. Ditto.
10	78	91	43	S. Cloudy, and a brisk wind.
11	72	90	43	S. Ditto.
12	77	90	44	S. Scattered clouds. [then.
1	84	91	45	S. The sun shines now and
2	80	91	45	S. Windy, and some clouds.
4	74	91	43	S. Cloudy, windy.
10	—	—	37	W. Clear, and a brisk wind.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. But little air was given to-day. The lights were shut down at 3 o'clock, and remained so all night. At noon I went over the plants, and stopped them, let the fruit in blossom, and thinned the leaves where wanted.

*Saturday, February 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	31	S.W. Clear, and a brisk wind.
9	88	95	35	S.W. There is a rainbow in the west.
10	80	95	36	S.W. Sunshine, and a brisk
11	76	93	38	S.W. Showers of rain. [wind.
12	74	92	41	S.W. Squally showers.
2	70	91	43	S.W. Ditto.
4	63	90	42	S.W. Showery and windy.
6	—	—	42	S.W. High wind and showers.
10	—	—	42	S.W. Ditto.

The frames were uncovered at 9 o'clock in the morning,

morning, and covered up in the evening with about three inches thick of hay and mats. Air was given in the day-time, and a little left at each light during the night. To-day the linings were watered.

*Sunday, February 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	38	S.W. Clear, and a brisk gale
9	69	88	40	S.W. Ditto. [of wind.
10	68	87	43	S.W. Scattered clouds, windy.
11	68	87	44	S.W. Showery and windy.
1	71	87	45	S.W. Windy, and flying clouds.
4	57	86	39	S.W. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening as usual. Air was continued day and night.

*Monday, February 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	34	S.W. Clouds here and there.
9	76	88	37	S.W. Cloudy, and a brisk wind.
10	70	87	38	S.W. Ditto.
12	70	87	42	S.W. Sunshine.
1	80	87	42	S.W. The sun shines faintly.
2	78	88	41	S.W. Ditto.
4	70	88	39	S.W. Clouds here and there.
8	—	—	33	S.W. Clear, and nearly calm.

The frames were uncovered at 9 o'clock in the morning, and covered up between 4 and 5 in the evening with about three inches thick of hay and mats. Air was given in the day-time, and a little



little left all night at each light. I went over the plants and stopped them, thinned their leaves, and set the fruit that were in blossom. The mould on the flues was got quite dry, therefore I had it taken off, and the flues swept with a hair hand-broom: This being done, I took water warmed to about 75 degrees, and poured plenty of it on the flues, and against the sides of the frames all round about. Having thus done, I shut the lights close down for about twenty minutes, and then gave air.

*Tuesday, February 5, 1793.*

Hours.	S.Th.	P.Th.	Thcr.	Wind.
6	—	—	31	S. Calm, and but few clouds.
9	80	89	33	S. Ditto.
10	77	89	36	S. E. Foggy, clouds.
12	78	88	39	S. E. The sun glimmers.
2	80	89	40	N. Sunshine.
4	73	89	38	N. W. Clouds here and there.
8	—	—	30	N. E. Ditto.

The frames were uncovered about 9 o'clock, and covered up between 4 and 5 in the evening with about three inches thick of hay and mats. About 4 o'clock I took water 80 degrees warm, and therewith I watered the sides of the hills all round, and then gave each hill of plants a small pot full of water all over their leaves; also I sprinkled the flues, and sides of the frames. The plants were stopped, their leaves thinned, and the fruit in blossom set.

*Wednesday, February 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	33	S.W. It rains lightly.
9	82	89	38	S.W. Ditto.
10	74	89	42	W. The sun shines faintly.
12	80	89	45	N.W. Ditto.
1	82	89	45	N.W. High foggy clouds.
2	76	89	43	N.W. Cloudy, and a brisk wind,
4	72	89	41	N.W. Ditto.
10	—	—	37	N.W. It has rained since 7 o'clock.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. I went over the plants, and stopped them, thinned their leaves, set the fruit in blossom, and picked out the weeds and the dead blossoms. Air was given the greatest part of the day, and a little left all night. The north side lining was raised with fresh dung.

*Thursday, February 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	W. Cloudy; there had been much rain in the night, and the earth is covered with snow.
8	—	—	32	W. Clear in the north-west.
9	80	89	31	N.W. Cloudy in the east.
10	77	89	33	N.W. Sunshine.
12	85	89	38	N.W. The snow is nearly gone.
1	87	89	38	N.W. Sunshine.
2	86	90	38	N.W. Scattered clouds.
4	75	90	36	N.W. Ditto.
10	—	—	33	N.W. Clouds here and there.

The frames were uncovered at 9 o'clock, and covered



vered up at half past 4 in the evening with about three inches thick of hay and mats. At 3 o'clock I took water 85 degrees warm, and watered well therewith the outsides of the hills all round, and poured some on the flues. A little air was then given, and let remain all night.

To-day the south side lining was turned over, and well shaken, and made up again, and some fresh dung laid on the top of it.

*Friday, February 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	32	S.W. Cloudy, and a brisk wind.
9	72	87	36	S.W. Cloudy and windy.
10	68	86	40	S.W. Windy, and it rains.
12	67	84	43	S.W. It rains hard.
1	62	82	38	S.W. Fair ; the sun appears.
4	66	82	42	S.W. Cloudy and windy.
7	—	—	40	S.W. Ditto.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. I went over the plants, and set the fruit in blossom. But little air was given in the day-time, and the lights were shut down in the evening for the night.

*Saturday, February 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	34	W.	Thin clouds cover the sky.
9	73	81	38	W.	Cloudy, and but little
10	70	81	40	W.	Ditto. [wind.
12	70	81	45	W.	The sun glimpses.
2	74	81	46	S.W.	Ditto.
4	68	81	45	S.	Cloudy.
10	—	—	40	S.	Ditto.

The frames were uncovered at 9 o'clock, and covered up in the evening with about four inches thick of hay and mats. I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. About 4 o'clock I took water about 78 degrees warm, and watered the sides of the hills, and poured some on the flues. Air was given in the day-time, and a little left all night at each light.

*Sunday, February 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	32	W.	Clear, and a strong gale of
9	68	80	34	W.	Ditto. [wind.
10	69	80	37	W.	Windy, and flying clouds.
11	69	80	38	W.	High wind, and some clouds.
1	70	80	38	W.	Ditto.
2	72	80	36	W.	A shower of dry hail.
4	68	80	36	W.	High wind, and some clouds.
9	—	—	33	W.	Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with hay and mats. Air was given till 1 o'clock, when the lights were close shut down for the night.

*Monday,*



*Monday, February 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	N.W. Clear, and a high wind; the wind was very high in the night.
9	77	82	37	N.W. Sunshine., windy.
10	77	82	37	N.W. Ditto.
12	80	83	38	N.W. Ditto.
2	78	84	38	N.W. Scattered clouds.
4	72	83	37	N.W. Ditto. [of wind.
9	—	—	36	N.W. Cloudy, and a brisk gale

The frames were uncovered about 9 o'clock, and covered up between 4 and 5 in the evening with about four inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set the fruit in blossom. Air was given in the day-time, and the lights were shut close down all night. A little earth was laid all round the outsides of each hill to cover the roots of the plants, which were come through the hills very thick.

*Tuesday, February 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	38	W. Cloudy, and a brisk wind.
9	70	82	41	W. Ditto.
10	70	82	44	W. Ditto.
12	72	82	47	W. Scattered flying clouds.
2	79	83	47	N.W. Ditto.
4	70	83	43	N.W. Cloudy and windy.
7	—	—	42	W. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about  
four

four inches thick of hay and mats. The linings, being sunk, were raised with fresh dung. In the forenoon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. At 3 o'clock I took water 80 degrees warm, and gave the sides of the hills all round a good watering, and sprinkled some of it on the flues. But little air was given in the day-time, and the lights were shut close down during the night.

*Wednesday, February 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	35	S.W. Cloudy, and but little wind. [sun.
8	81	85	36	S.W. The sky is red before the
10	73	84	39	S.W. It rains very lightly.
12	75	84	48	S.W. Cloudy.
2	76	84	50	S.W. Ditto.
4	72	84	50	S.W. Ditto.
5	68	84	48	S.W. Ditto.
7	—	—	46	S.W. Ditto.

The frames were uncovered at 8 o'clock in the morning, and covered up about 5 o'clock in the evening with about three inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set the fruit in blossom, and I nipped off several of the showing fruit and male blossoms where they were too thick. I poured water on the flues and sides of the frames all round; the water was about 78 degrees warm. Air was given in the day-time, and a little left at each light all night.

*Thursday,*



*Thursday, February 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. Windy, and a small dri-
8	74	84	45	S.W. Ditto. [ving rain,
10	68	83	44	W. It rains.
12	66	82	39	N.W. Ditto.
2	76	83	43	N.W. Sunshine.
4	70	83	41	W. Clouds here and there.
7	—	—	35	W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with three inches thick of hay and mats. The lights were shut down at 11 o'clock, and remained so till about 1 o'clock, when a little air was given and continued all night. I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom, and picked off several of the showing and set fruit where they were too thick.

*Friday, February 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	S.W. It rains.
8	72	83	36	S.W. Ditto.
10	68	82	37	S.W. Ditto.
12	72	83	39	S.W. Fair, gloomy.
2	70	82	40	S.W. Thick moist air.
4	68	82	39	S.W. It rains gently.
5	67	82	38	S.W. Fair, gloomy.
7	—	—	36	S.W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up at 5 in the evening with three inches thick of hay and mats.

I looked

I looked over the plants, and stopped them, thinned their leaves, and set the fruits in blossom. But little air was given in the day-time, and the lights were shut down all night. The linings were raised with dung just taken out of the stables.

*Saturday, February 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	N. E. Cloudy in the horizon.
9	79	85	31	N. E. Cloudy.
10	75	85	34	N. E. The sun shines faintly.
12	77	84	37	N. E. Ditto.
2	80	84	38	N. E. Ditto.
4	75	84	37	N. E. Cloudy, and but little
5	71	86	36	N. E. Ditto. [wind.

The frames were uncovered at 9 o'clock, and covered up in the evening with about four inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, set the fruit in blossom, and picked out of the mould some weeds. Air was admitted in the day-time, and the lights shut down all night.

*Sunday, February 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	N. E. Foggy, nearly calm.
9	82	86	31	N. E. Ditto.
11	76	85	37	N. E. Foggy clouds.
1	75	85	39	N. E. Cloudy, gloomy.
4	70	85	37	N. E. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about  
three



three inches thick of hay and mats. But little air was given in the day-time, and less during the night.

*Monday, February 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	S.W. Thin clouds, and a brisk
8	80	86	35	S.W. Cloudy. [wind.
10	74	85	37	S.W. Ditto.
12	70	84	42	S.W. It rains lightly.
2	68	84	43	S.W. Ditto.
4	70	83	41	W. Cloudy.
5	—	—	40	N. E. Ditto.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up a little past 4 with about three inches thick of hay and mats. About two o'clock I poured plenty of water on the flues all round the plants, and those parts of the sides of the hills that were getting dry I watered plentifully. The water that I used was about 80 degrees warm.

After watering, the lights were shut down for about an hour, and then a little air was given at each light, and continued all night. The plants were looked over and stopped, their leaves thinned, and the fruit in blossom set.

*Tuesday,*

*Tuesday, February 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	26	S.W. Clear, and but little wind.
8	79	85	28	S.W. Ditto.
10	80	85	35	S.W. Sunshine.
12	85	86	38	S.W. Ditto.
2	84	86	39	S.W. Ditto.
4	77	86	39	S.W. Ditto.
5	76	86	38	S.W. Clear, and near calm.

The frames were uncovered about 8 o'clock in the morning, and covered up at 5 in the evening with about three inches thick of hay and mats.

In the forenoon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was given plentifully in the day-time, and a little all night.

*Wednesday, February 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	27	N.W. Clear, and nearly calm.
8	79	85	26	N.W. Ditto.
9	75	85	29	N.W. Sunshine.
11	87	86	35	N.W. Ditto.
12	87	87	39	N.W. Ditto.
2	90	88	41	N.W. Ditto.
3	90	89	42	S.W. Scattered clouds.
4	84	89	40	S.W. Ditto.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. Air was given in the day-time, and a little left at each light all night. The plants were gone over and stopped, their leaves thinned, and the fruit in blossom set.

*Thursday,*



*Thursday, February 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	S.E. White frost, some clouds, but little wind.
8	80	85	32	S.W. Clear, and a brisk wind.
10	81	85	34	S.W. Sunshine, and a brisk gale
12	85	85	37	S.W. Ditto. [of wind.
2	86	86	39	S.W. Ditto.
4	80	86	40	S.W. Ditto.
8	—	—	32	S.W. Clear, and nearly calm.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Plenty of air was admitted in the day-time, and a little left all night. I went over the plants in the forenoon, and stopped them, thinned their leaves, and set the fruit in blossom.

*Friday, February 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	25	S.W. Clear, and nearly calm.
8	75	83	26	S.W. Ditto.
10	82	83	29	S.W. Sunshine.
12	90	85	38	S.W. Ditto.
2	88	85	40	S.W. Ditto.
4	80	85	39	S.W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. At noon I watered all round the sides of the hills next to the flues, and then I laid

I laid some mould on the flues between each hill, and also a little round the sides of the hills to cover the roots of the plants. The linings, being sunk, were raised with hot dung.

*Saturday, February 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	41	S.W. Thin clouds, and a brisk
8	78	86	42	S.W. Ditto. [wind.
10	75	86	47	S.W. Ditto.
11	83	86	50	S.W. The sun shines faintly.
12	84	86	50	S.W. Ditto.
2	80	86	49	S.W. Cloudy.
4	70	85	47	S.W. It rains a little.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. Air was given in the day-time, but the lights were shut down all the night.

*Sunday, February 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. Thin clouds, nearly calm.
8	78	85	50	S.W. Ditto.
10	79	85	50	S.W. Ditto.
11	82	86	52	S.W. Cloudy, and nearly calm.
1	83	86	55	S.W. The sun glimmers.
2	82	86	54	S.W. Ditto.
4	80	86	49	S.W. Cloudy, gloomy.
5	76	85	48	S.W. Ditto.
8	—	—	46	S.W. Cloudy, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about



about two inches thick of hay and mats. There was but little air admitted in the day-time, and less in the night. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set the fruit in bloom. The linings were examined, and put close to the bed, and then a layer of fresh dung laid on the top of them.

*Monday, February 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. Cloudy, and a brisk wind.
8	78	86	47	S.W. Ditto.
10	75	86	47	S.W. Ditto.
12	68	85	48	S.W. Ditto.
2	70	85	48	S.W. Cloudy and windy.
4	68	84	45	S.W. Ditto.

The frames were uncovered about half past 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, set the fruit that were in bloom, and where I found them too thick, I nipped off several showing fruit.

About 3 o'clock in the afternoon I got water about 85 degrees warm, and therewith I watered well the sides of the hills all round about, and I poured some on every part of the flues. I used about a hoghead of water, and when the watering was finished, I had the lights shut down close till about 8 o'clock at night, when a little air was admitted at every light.

*Tuesday, February 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	37	N.W. Windy, and some clouds.
8	76	84	39	N.W. Clear, and windy.
10	79	84	41	N.W. Ditto.
12	80	84	44	N.W. Sunshine, windy.
2	80	85	47	W. Ditto.
4	79	85	47	W. The wind is fallen.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was given in the day-time, but the lights were shut close down all night. The plants were gone over, and stopped, their leaves thinned, and the fruit in blossom set.

*Wednesday, February 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S.W. Cloudy, and a brisk wind.
8	80	86	43	S.W. Ditto.
10	78	86	45	S.W. Cloudy and windy.
12	70	85	47	S.W. Ditto.
2	60	84	47	S.W. Ditto.
4	58	83	46	S.W. Ditto. [calm.
8	—	—	40	S.W. Clouds in the horizon,

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about five inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set the fruit in blossom, and after that I took mould, and laid upon all the cross flues, and raised it on them as high as the mould of the hills, and by pressing it gently I made it nearly of an equal firmness



firmness with that in which the plants were growing. I also laid some mould all along the sides of the hills, leaving a vacancy only of about five inches between the mould and the sides of the frames on each side of the plants. This vacancy is left to let the heat arise freely from the side flues, to warm the air in the frames for the nourishment and growth of the plants. Likewise I laid a little fresh mould among the stems and shoots of the plants. It was 4 o'clock before I had done; the lights were then shut down for the night.

*Thursday, February 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S.W. Cloudy, and but little wind.
8	78	85	41	S.W. A small misty rain falls.
10	70	85	44	S.W. Ditto.
12	83	85	45	S.W. Scattered clouds.
2	84	85	45	S.W. The sun shines. [calm.
4	80	86	44	S.W. Scattered clouds, near
5	77	86	40	S.W. Clouds here and there.
8	—	—	37	W. Clear and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. About noon I went over the plants, and stopped them, thinned their leaves, and set the fruit that were in blossom. In several parts of the frames the plants were hanging over the sides of the hills, and down on the flues; therefore I took bricks, and set them edgewise on the flues close against the sides of the frames, eight inches high above the flues. I then took plain tiles eleven

inches long, and laid the one end of them on the said bricks, and the other rested on the mould of the hills. This I did only here and there, where the plants had extended their shoots beyond the surface of the hills of mould; and where more tiles than one were required near each other, I left vacancies between them of about two inches, so that the warmth of the flues might not be hindered from rising freely; and as I proceeded I trained out carefully the vines of the plants on the tiles. The plants are in a vigorous fruitful state, and their leaves broad, some of them measuring nine and ten inches diameter.

*Friday, March 1, 1793.*

Heurs.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S.W. Flying clouds, windy.
8	83	88	42	S.W. Ditto.
10	74	87	43	S.W. Ditto.
12	66	86	42	S.W. High wind, and a small
2	68	86	43	S.W. Ditto. [rain.
4	65	85	44	S.W. Ditto.
5	64	85	44	S.W. Ditto.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Air was given in the day-time, and a little left all night at each light. The plants were gone over, and stopped, their leaves thinned, and the fruit in blossom set. At 5 o'clock in the evening water 80 degrees warm was poured on the flues, till it stood in pools here and there.

*Saturday,*



*Saturday, March 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S.W. Windy, and some clouds.
8	70	83	42	S.W. Ditto.
10	76	83	45	S.W. The sun shines faintly.
12	82	84	48	S.W. Ditto.
2	75	85	50	S.W. Cloudy, and windy.
4	68	84	49	S.W. Ditto.
5	64	83	48	S.W. Ditto.
8	—	—	48	S.W. Ditto.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up at 5 in the evening with three inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set the fruit in blossom. Air was given now and then in the day-time, and a little left all the night at each light.

*Sunday, March 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	35	W. Clear, and a high wind; the wind was very high last night.
8	62	81	37	W. Clear, and a high wind..
10	74	81	41	W. Sunshine, windy.
11	80	82	43	W. Scattered clouds, windy.
1	82	83	45	W. Ditto.
4	71	84	42	W. A shower of hail.
5	68	84	41	W. Cloudy, and windy.
9	—	—	36	W. Clear, and windy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with

three inches thick of hay and mats. Air was given in the middle of the day, and the lights were shut close down all night.

*Monday, March 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	W. Clear, and a brisk gale of
8	75	84	31	W. Ditto. [wind.
10	76	84	35	W. Sunshine.
12	85	85	40	W. Scattered great clouds.
2	82	85	43	W. Ditto.
4	75	85	42	W. A heavy shower of hail.
5	68	85	40	W. Great black clouds.
7	—	—	35	W. Clear, and near calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. In the forenoon I went over the plants, and stopped them, thinned their leaves, and set the fruit in bloom.

At 4 o'clock I took water about 85 degrees warm, and poured it plentifully on the flues, and then shut the lights close down. The plants are very vigorous, and their roots appear thick all over the surface of the mould, and are matted close to the flues, and where the bare parts of the flues are moist, there the roots are run upon them.

*Tuesday,*



*Tuesday, March 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	S. E. Thin clouds, but little
8	78	85	33	S. E. Ditto. [wind.
10	78	85	37	S. E. Ditto.
12	85	85	43	S. E. The sun shines faintly.
2	82	86	45	S. E. Ditto.
4	80	86	44	S. E. Cloudy, and a brisk wind.
5	78	86	43	S. E. Ditto.
8	—	—	40	S. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up about half past 5 with four inches thick of hay and mats. At noon I went over the plants, and stopped them, thinned their leaves, set the fruit in blossom, and nipped off the weakest of the showing fruit where they were too thick. Air was given at 10 o'clock in the morning, and continued till between 3 and 4 in the afternoon, when I poured some water on the flues and against the sides of the frames, and then shut the lights down for the night.

*Wednesday, March 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	E. Cloudy, and near calm.
8	78	85	37	E. Ditto.
10	80	85	42	E. The sun glimpses,
12	88	86	48	N. E. Scattered clouds.
2	80	86	47	N. E. Cloudy.
4	73	86	41	N. E. A shower of hail at 3 o'clock
5	69	86	40	N. E. Clouds near the horizon.
7	—	—	35	N. E. Clear, and a brisk wind.

The frames were uncovered about 8 o'clock in the morning,

morning, and covered up a little past five with four inches thick of hay and mats. At noon I went over the plants, and stopped them, thinned their leaves, and set the fruit in blossom. Air was given now and then in the day-time, and a little left at each light all night.

*Thursday, March 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	N. E. Cloudy, and but little wind.
9	75	85	35	N. E. Cloudy and gloomy.
10	72	84	39	N. E. Ditto.
12	76	84	45	N. E. The sun glimpses.
2	80	84	44	N. E. Ditto.
4	73	84	40	N. E. Cloudy, and a brisk wind,
5	70	84	38	N. E. Ditto.
8	—	—	36	N. E. Ditto.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. The plants were gone over, and stopped, their leaves thinned, the fruit in bloom set, and several showing fruit nipped off. But little air was given in the day-time, and at 4 o'clock the lights were shut close down for the night,

*Friday,*



*Friday, March 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	N. E. Cloudy and cold.
9	72	83	36	N. E. Scattered clouds.
10	78	83	37	N. E. Sunshine, windy.
12	85	84	39	N. E. Ditto.
2	84	85	40	N. E. Ditto.
4	80	85	37	N. E. Ditto.
5	70	85	35	N. E. Ditto.
7	—	—	30	N. E. Clear and windy.

The frames were uncovered just before 9 o'clock, and covered up in the evening with about 3 inches thick of hay and mats. In the forenoon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was given at 10 o'clock, and continued till between 3 and 4, when it was taken away for the night.

*Saturday, March 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	E. Cloudy and a brisk gale of
9	74	83	35	E. Ditto. [wind.
10	75	83	38	E. Scattered clouds.
12	90	85	41	E. Sunshine.
2	80	85	41	E. Ditto.
4	77	85	38	E. Ditto.
5	70	85	35	E. Clear, and a brisk wind.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned, the fruit in blossom set, and the weeds picked out of the mould

mould among the plants. Air was continued all day, and a little left at each light during the night.

*Sunday, March 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	24	E. Clear and calm.
8	70	82	23	E. Ditto.
10	72	82	33	E. Sunshine.
11	77	83	38	E. Ditto.
1	75	84	40	E. Ditto.
2	74	84	39	E. The air is overcast.
5	70	84	35	E. Cloudy and windy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was given in the day-time, and some left all night.

*Monday, March 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	E. Cloudy, windy, cold.
8	—	—	33	E. Ditto.
10	68	80	34	E. Ditto.
11	66	80	35	E. Ditto.
12	67	79	36	E. Ditto.
1	68	79	36	E. Ditto.
2	65	79	35	E. Ditto.
4	63	79	34	E. Ditto.
5	62	79	33	E. Ditto.

The frames were uncovered a little before 10 o'clock, and covered up at five in the evening with about five inches thick of hay and mats: At noon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. The linings were



were raised higher than the mould in the frames with fresh dung. The lights were kept shut down as close as possible all the day, and remained so during the night.

*Tuesday, March 12, 1793.*

Hours, S.Th. P.Th. Ther. Wind.

6	—	—	30	E. Cloudy, windy, and cold.
9	70	79	32	E. Ditto.
10	70	79	33	E. Scattered clouds, windy.
12	80	80	35	E. Sunshine, windy.
2	87	82	36	E. Ditto.
4	86	82	35	E. Ditto.
5	80	82	33	E. Ditto.
6	—	—	30	E. Clear, the wind fallen.

The frames were uncovered about 9 o'clock in the morning, and covered up at 5 in the evening with four inches thick of hay and mats. I went over the plants and stopped them, thinned their leaves, and set those fruit that were in bloom. Air was given at 10 o'clock in the morning, and remained till 4 in the afternoon, when the lights were shut down for the night.

*Wednesday, March 13, 1793.*

Hours, S.Th. P.Th. Ther. Wind.

6	—	—	40	S. Cloudy; there had been rain in the night.
8	78	82	45	S.W. Cloudy, and a brisk wind.
9	76	82	47	S.W. Ditto.
10	72	82	48	S.W. Ditto.
12	78	82	53	S.W. Ditto.
4	78	82	52	S.W. Ditto.
5	72	82	48	S.W. Ditto.

The frames were uncovered about 8 o'clock in the

the morning, and covered up in the evening with about four inches thick of hay and mats. Air was admitted at 9 o'clock, and continued all day, and a little left all night at each light. In the forenoon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom.

*Thursday, March 14, 1793.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	—	—	—	—	39	S. Cloudy and near calm.
8	79	83	—	—	43	S. Ditto.
10	82	83	—	—	50	S. The sun glimmers.
11	88	84	—	—	53	S.W. Ditto.
22	83	85	—	—	55	S.W. Ditto.
2	88	85	—	—	53	S.W. Ditto.
3	88	85	—	—	52	S.W. Sunshine.
4	85	85	—	—	50	S.W. Clouds here and there.
7	—	—	—	—	43	S.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered in the evening with about two inches thick of hay and mats. In the morning I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Between 11 and 12 o'clock I watered the plants with water eighty-five degrees warm; in doing which I first poured some of it on the mould next and close to the flues, and then poured it all over the plants and every part of the frames, out of a watering-pot with a rose on its spout; I gave them about a hog-head of water, and immediately shut the lights down for about a quarter of an hour.

*Friday,*



*Friday, March 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	S.W. Clear and near calm.
8	79	85	35	S.W. Ditto.
10	88	86	41	S.W. Sunshine.
12	89	86	48	W. Ditto.
2	87	87	52	W. Ditto.
3	77	87	48	W. The air is overcast.
4	74	87	47	W. Cloudy, and but little wind.
5	72	86	47	W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned, the weeds picked out, and the fruit in blossom set. Air was given plentifully in the day-time, and a little left all night at each light.

*Saturday, March 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	39	S. Thin clouds; nearly calm.
8	81	86	44	S. Cloudy, and a brisk wind.
10	85	86	47	S. Cloudy and windy.
12	85	87	52	S.W. Ditto.
3	78	87	48	S.W. Ditto.
4	74	86	47	S.W. Ditto.
5	70	86	46	S.W. It begins to rain.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with two inches thick of hay and mats. When the frames were uncovered I went over the plants and stopped them, thinned their leaves, and set the fruit that

that I found in blossom. In the forenoon I poured water upon the flues on each side of the plants. Air was given day and night.

*Sunday, March 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	S.W. Clear; there had been rain in the night.
8	74	83	35	S. Clouds here and there.
10	85	83	39	S. Sunshine.
11	85	83	42	S. E. Scattered clouds.
1	83	84	46	S. E. Ditto.
2	77	84	45	S. E. Cloudy, and a brisk wind.
4	75	84	42	S. E. It looks rainy.
5	—	—	41	S. E. It rains.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Plenty of air was admitted in the day-time, but the lights were shut close down all night.

*Monday, March 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S. E. Cloudy; there had been a good deal of rain in the night.
8	75	82	44	S. E. Scattered clouds.
10	80	82	48	S. E. The sun glimpses.
12	80	83	51	S. Sunshine.
1	89	84	51	S.W. Ditto.
2	78	84	50	S.W. Cloudy.
4	72	84	47	S.W. It rains.
5	70	83	40	W. Ditto.
8	—	—	30	N.W. Cloudy, and a brisk wind.

The frames were uncovered at 8 o'clock in the morning,



morning, and covered up in the evening with about three inches thick of hay and mats. In the forenoon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was admitted from 10 o'clock in the morning till 4 in the afternoon, when the lights were shut down for the night.

*Tuesday, March 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	S.W. Cloudy, and near calm.
8	72	82	37	S.W. Ditto.
10	77	82	39	S.W. Ditto.
12	70	82	45	S.W. Ditto.
2	79	82	49	W. Scattered clouds.
4	82	83	48	W. Sunshine.
5	80	83	46	W. Ditto.
8	—	—	36	W. Clear, and nearly calm.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. At 10 o'clock I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom.

To-day I had the north-side lining renewed, in doing which the unexhausted dung of it was laid aside, and the rotten exhausted part of it wheeled away, leaving about nine or ten inches of the foundation unremoved, and which I had loosened up with the dung-forks, and then the unexhausted dung that was laid aside was well flaken and laid upon it, making the lining of an equal height therewith; when that was done, the lining was finished with new dung, and

and it was raised higher up the sides of the frames than the mould in the inside of them.

*Wednesday, March 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	39	S.W. Cloudy, and but little wind.
8	70	80	44	S.W. Ditto.
10	76	80	48	S.W. The sun glimmers.
12	75	81	56	S.W. Ditto.
2	77	81	57	S.W. Cloudy.
4	75	81	53	S.W. Ditto.
5	72	81	50	S.W. Gloomy.
7	—	—	46	S.W. Cloudy, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. Air was given at 10 o'clock, and continued till 5 in the evening; when it was taken away for the night. The plants were stopped, their leaves thinned, and the fruit in blossom set.

*Thursday, March 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S.W. It rains lightly.
8	76	82	46	S.W. Cloudy and gloomy.
10	72	82	48	S.W. It rains gently.
12	74	82	51	S.W. Ditto.
2	74	82	50	S.W. Ditto.
5	72	82	47	S.W. Cloudy, and nearly calm.
8	—	—	39	S.W. Clear and calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. I went over the plants and stopped them, thinned their leaves, and set the



the fruit that I found in bloom. The north-side lining being sunk, was raised with new dung.

*Friday, March 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	38	S. Cloudy, red before sun-rising.
8	76	83	42	S. Cloudy, and a brisk wind.
10	74	83	44	S. It rains.
11	75	83	46	S. Ditto.
12	70	83	46	S. Ditto.
2	68	83	45	S. Ditto.
3	67	83	44	S. Fair, cloudy.
4	69	83	44	S. Showery.
8	—	—	42	S. Ditto.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. Air was not admitted till 11 o'clock. At 4 o'clock in the afternoon I poured cold water on the flues, and then shut the lights close down for the night.

*Saturday, March 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	W. Clear, and a brisk wind.
8	79	84	34	W. Ditto.
10	82	84	48	W. Sunshine.
12	88	85	51	S.W. Ditto.
2	86	83	51	S. Ditto.
4	78	86	46	S. Ditto.
6	—	—	37	S. Clouds here and there.

The frames were uncovered about 8 o'clock in the

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morning,

morning, and covered up at 5 in the evening with about three inches thick of hay and mats. In the forenoon I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was given at 10 o'clock in the morning, and continued all day, and a little left at each light all night.

*Sunday, March 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	E. Clear, and a brisk gale of wind.
8	70	83	35	N. E. Scattered clouds, windy.
10	70	83	37	N. E. Cloudy and windy.
1	63	82	38	N. E. It rains lightly.
2	65	82	38	N. E. Ditto.
4	62	82	37	N. E. Cloudy and windy.

The frames were uncovered between 8 and 9 o'clock in the morning, and covered up about 5 in the evening with about four inches thick of hay and mats.

*Monday, March 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	N. E. It is a cold wet morning.
9	70	82	37	N. E. Ditto.
10	68	82	40	N. E. Fair, cloudy, windy.
12	74	82	42	N. E. Ditto.
2	70	82	41	N. E. Ditto.
4	68	82	39	N. E. Ditto.
8	—	—	36	N. E. Ditto.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. I went over the plants and stopped them, thinned their leaves, and set

the



the fruit in blossom. The linings being sunk, were raised with new dung. But little air was given in the day-time, and the lights were shut close down all night.

*Tuesday, March 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	N. E. Rainy and windy.
7	—	—	30	N. E. A heavy fall of wet snow.
10	74	83	34	N. E. Windy, cold, and rainy.
12	67	82	35	N. E. Cloudy, windy, cold.
1	63	82	35	N. E. Ditto.
2	64	81	35	N. E. Ditto.
4	65	81	35	N. E. Ditto.
8	—	—	33	N. E. Clear, and windy.

The frames were uncovered a little before 10 o'clock in the morning, and covered up at 5 in the afternoon with about five inches thick of hay and mats. Air was admitted for two hours in the middle of the day, and the lights were kept close shut down all night.

*Wednesday, March 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	N. E. Cloudy, cold, and windy.
9	72	83	33	N. E. Ditto.
10	70	83	35	N. E. Ditto.
12	70	83	38	N. E. Ditto.
2	80	83	38	N. E. The sun glimpses.
4	74	84	36	N. E. The wind is fallen.
8	—	—	31	N. E. Cloudy, and a brisk wind.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about five inches thick of hay and mats. At noon I went over the plants and stopped them, thinned their leaves,

and set the fruit in blossom. But little air was given in the day-time, and the lights were shut close down all night.

*Thursday, March 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	N. E. The earth is covered with snow, and snow continues to fall.
8	76	84	32	N. E. Sunshine, near calm.
9	78	84	33	N. E. Scattered clouds.
10	81	85	38	N. E. Ditto.
12	81	85	40	N. E. Cloudy, and a little snow
2	87	86	39	N. E. Sunshine. [falls.
3	87	86	38	N. E. Ditto.
4	84	87	36	N. E. Ditto.
9	—	—	24	N. E. Clear and calm.
10	—	—	23	N. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up a little before 6 in the evening with about five inches thick of hay and mats. Air was admitted at 10 o'clock in the morning, and taken away at 5 o'clock in the afternoon. The linings were raised with dung fresh from the stables. In the forenoon the plants were gone over and stopped, their leaves thinned, the weeds picked out, and the fruit in blossom were set.

The frames were uncovered at 9 o'clock in the morning, and covered up in the evening with about five inches thick of hay and mats. At noon I went over the plants and stopped them, thinned their leaves,

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*Friday,*



*Friday, March 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	26	N. E. Cloudy.
9	80	87	37	N. E. The sun glimmers.
10	87	87	40	N. E. Ditto.
12	88	88	43	E. Sunshine.
2	84	89	44	E. Ditto.
4	80	89	42	E. Clouds here and there.
8	—	—	29	E. Clear and calm.
10	—	—	25	E. Ditto.

The frames were uncovered about 9 nine o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. About noon I went over the plants and stopped them, thinned their leaves, and set the fruit that I found in bloom: I then took water eighty degrees warm, and poured plenty of it on the flues, and on the mould next to the flues.

*Saturday, March 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	23	N. E. Clear and nearly calm.
8	80	87	28	N. E. Ditto.
9	82	87	32	N. E. Sunshine.
10	90	88	35	N. E. Ditto.
11	87	89	39	N. E. Ditto.
12	86	90	42	N. E. Ditto.
1	90	90	43	N. E. Ditto.
2	87	90	44	N. E. Ditto.
4	79	90	45	N. E. Scattered clouds.
5	82	90	42	N. E. Ditto.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about

four inches thick of hay and mats. As soon as the frames were uncovered, I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was given all day, but the lights were shut down all night.

*Sunday, March 31, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	25	N. E. Clear and calm.
8	82	89	30	N. E. Ditto.
10	90	90	37	N. E. Sunshine.
1	87	91	42	N. E. The sun shines faintly.
2	93	92	44	N. W. Sunshine.
4	78	92	42	N. W. Some clouds, but little wind.
5	82	92	38	N. W. Ditto, and the sky looks
6	—	—	36	W. Ditto. [frosty.
10	—	—	34	W. Cloudy.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. Air was admitted plentifully in the day-time, and a little left all night at each light.

*Monday, April 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	S. It snows.
9	78	90	36	S. Snow continues to fall.
10	74	90	37	S. E. Sleety, snow falls.
12	68	89	37	S. E. It rains.
2	68	88	37	S. E. Ditto.
3	66	87	37	S. E. Ditto.
4	65	87	37	S. E. Ditto.
6	—	—	36	S. E. Gloomy, and a thick moist atmosphere.

The frames were uncovered about 9 o'clock in the morning,



morning, and covered up about 5 in the evening with about five inches thick of hay and mats. About noon I went over the plants and stopped them, and set the fruit that I found in blossom. The lights were kept shut down as close as possible all day, and remained so all night. The north-side lining was raised with fresh dung.

*Tuesday, April 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	31	W. The earth is covered with snow, and snow continues falling.
7	—	—	32	W. A heavy fall of wet snow.
9	—	—	34	N.W. It rains.
10	75	87	37	N.W. Fair and cloudy.
12	73	87	39	N.W. Ditto.
2	68	86	38	W. Cloudy, and a brisk wind.
4	67	86	37	W. Ditto.
5	66	85	37	W. Ditto.
8	—	—	36	W. Cloudy and dark.

The frames were uncovered a little before 10 o'clock in the morning, and covered up in the evening with about five inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. A little air was admitted in the middle of the day, but the lights were shut close down all night.

*Wednesday, April 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	W. Clear, and but little wind.
8	78	86	34	S.W. Sunshine.
10	82	86	40	S.W. Ditto.
11	83	86	47	S.W. Scattered clouds.
12	76	87	49	S.W. Ditto.
1	77	88	49	S.W. Ditto.
3	81	88	48	S.W. Ditto.
5	82	88	42	S.W. Clouds here and there.

The frames were uncovered about 8 o'clock in the morning, and covered up at 5 in the afternoon with about four inches thick of hay and mats. In the morning I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was admitted plentifully in the day-time, but the lights were shut close down all night.

*Thursday, April 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	33	N.E. Thin clouds, near calm.
8	82	89	38	N.E. Ditto.
10	88	90	48	N.E. The sun glimmers.
12	84	90	50	N.E. Ditto.
2	82	90	52	N.E. Scattered clouds.
4	80	90	48	N.E. Ditto.
6	—	—	44	N.W. The sun looks very red, and the sky frosty.
9	—	—	39	N.E. The stars appear faintly, nearly calm.

The frames were uncovered a little past 8 in the morning, and covered up at 5 in the evening with near  
four



four inches thick of hay and mats. Air was given at 9 o'clock in the morning, and continued till about 4 in the afternoon, when the lights were shut down for the night. About noon the plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. When that was done I gave the plants a hearty watering with water about 82 degrees warm; most water was given to the mould next to the flues, and some was poured on the flues.

*Friday, April 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	36	N. E. Cloudy, and but little wind.
8	83	90	44	N. E. Sunshine.
10	88	91	46	N. E. Ditto.
12	88	92	50	N. E. Ditto.
1	91	92	53	N. E. Ditto.
2	89	92	53	N. E. Ditto.
3	86	93	54	N. E. Ditto.
4	82	91	52	N. E. Ditto.
9	—	—	38	N. E. Clear, and nearly calm.

The frames were uncovered at 8 o'clock in the morning, and covered up between 5 and 6 in the afternoon with about four inches thick of hay and mats. In the morning the plants were gone over and stopped, their leaves thinned, the weeds picked out, and the fruit in bloom set. Air was given about 9 o'clock in the morning, and taken away about 4 in the afternoon.

*Saturday,*

*Saturday, April 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	37	N. E. Foggy.
9	82	91	40	N. E. Ditto.
10	87	92	45	N. E. The sun glimmers.
11	90	92	46	N. E. Ditto.
12	87	92	47	N. E. Sunshine.
2	90	92	52	E. Ditto.
4	80	92	50	E. Ditto.
9	—	—	35	E. Clear, and near calm.

The frames were uncovered about 9 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. In the morning I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was admitted at 9 o'clock in the morning, and continued all day, and a little left all night at every light.

*Sunday, April 7, 1793.*

[Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	30	E. Clear, and a brisk wind.
8	79	89	39	E. Ditto.
10	92	90	48	E. Bright sunshine.
1	87	92	50	E. Ditto.
3	84	92	49	E. Ditto.
4	80	92	47	E. Ditto.
7	—	—	39	E. Clear, and a brisk wind.

The frames were uncovered about 8 o'clock in the morning, and covered at 5 in the evening with three inches thick of hay and mats. Plenty of air was given in the day-time, and a little was left during the night.

*Monday,*



*Monday, April 8, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	30	E. Clear, the frost white.
8	78	89	39	E. Sunshine, and a brisk gale
10	82	89	43	E. Ditto. [of wind.
12	80	89	48	E. Ditto.
2	80	90	46	E. Ditto.
5	78	89	43	E. Ditto. wind.
8	—	—	32	E. Clear, and a brisk gale of

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening about 6 o'clock with three inches thick of hay and mats. In the day-time air was admitted plentifully, and a little left all night at each light. In the morning I went over the plants and stopped them, thinned their leaves, and set the fruit in bloom. At noon the flues were floated with water about 80 degrees warm, and the mould near the flues was watered.

*Tuesday, April 9, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	28	E. Clear, and a brisk wind.
8	79	88	38	E. Sunshine, windy.
10	85	89	42	E. Ditto.
12	87	90	48	E. Scattered clouds, windy.
2	88	91	47	E. Ditto.
4	85	91	42	E. Ditto.

The frames were uncovered at 8 o'clock in the morning, and covered at 5 in the evening with about three inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned,

thinned, the fruit in bloom set, and the weeds picked out. Air was admitted plentifully from 9 in the morning till 4 in the afternoon, when the lights were shut down for the night.

To-day at noon I held the thermometer in the water in the pond, and it stood at 46, and when held in the water in the spring, it stood at 45; and a thermometer, with its bulb six inches deep in the earth on a north wall border, stood at 39.

*Wednesday, April 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	N. E. Clear, and near calm.
8	82	90	37	N. E. Clouds here and there, windy.
10	83	90	43	N. E. Scattered great snowy-
11	80	90	43	N. E. Ditto. [like clouds.
12	80	90	44	N. E. Cloudy, and windy.
2	75	90	44	N. E. Ditto.
5	76	89	43	N. E. Scattered clouds, which look snowy.
8	—	—	36	N. E. Clear, and a brisk gale of wind.

The frames were uncovered about 8 o'clock in the morning, and covered up between 5 and 6 in the afternoon with about four inches thick of hay and mats. The plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. Air was given from 10 in the morning till 4 in the afternoon, and then the lights were shut close down.

*Thursday,*



*Thursday, April 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	27	N. E. Thin streaky clouds.
6	—	—	28	N.W. Cloudy.
8	78	88	36	W. Ditto.
10	73	87	36	N.W. Snow falls.
12	75	87	41	N.W. Cloudy, and a brisk wind.
1	76	87	41	W. Ditto.
2	77	87	41	N. Showery.
4	76	83	42	N. E. Cloudy, and a brisk gale
6	—	—	39	N. E. Ditto. [of wind.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening between 5 and 6 with about four inches thick of hay and mats. In the forenoon I stopped the plants, thinned their leaves, and set the fruit in blossom; and about 3 o'clock in the afternoon I gave to each three-light frame about half a hoghead of water warmed, till it raised the thermometer to 82 degrees; and in giving the water, the lights were taken off one at a time, and the water poured all over the plants, flues, and sides of the frames out of water-pots with roses on them, in imitation of a heavy shower of rain. When the watering was finished, the lights were shut down for the night.

*Friday*

*Friday, April 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	N. E. Cloudy; snow had fallen in the night.
8	78	35	36	N. E. Cloudy, and a brisk wind.
10	75	85	37	N. E. It rains lightly.
12	78	85	43	N. E. Cloudy.
2	72	85	41	N. E. Ditto.
4	72	85	42	N. E. Ditto.
10	—	—	35	N. E. Clear, and near calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The plants were stopped, their leaves thinned, and the fruit in bloom set. Air was given but for one hour, and that was from 1 to 2 o'clock.

*Saturday, April 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	29	N. E. White frost, and a thick fog.
8	79	86	37	N. E. The sun shines faintly.
10	90	87	42	N. E. Sunshine.
11	88	87	44	N. E. Ditto.
1	93	90	48	N. E. Ditto.
3	96	91	52	N. E. Ditto.
5	90	90	52	N. E. Ditto.
10	—	—	46	N. E. Clouds here and there.

The frames were uncovered about 8 o'clock in the morning, and covered up in the afternoon about 5 with about three inches thick of hay and mats. In the morning I went over the plants and stopped them,



them, thinned their leaves, and set the fruit that I found in blossom. Air was given plentifully in the day-time, but the lights were shut close down all night.

*Sunday, April 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	N. E. Sunshine.
8	81	90	42	N. E. Some clouds.
10	78	90	42	W. Cloudy, and a cold wind.
11	82	90	42	N. W. Ditto.
1	82	90	42	N. Ditto.
2	80	90	40	N. E. The sun glimpses.
4	76	90	41	N. E. Ditto.
10	—	—	32	N. E. Clear, and a brisk wind.

The frames were uncovered about 8 o'clock in the morning, and covered up about 5 in the afternoon with three inches thick of hay and mats. Air was admitted at 9 o'clock, and continued all day, and a little left at each light all night.

*Monday, April 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	28	S. W. Streaky clouds, and a brisk wind.
8	67	85	36	S. W. Clouds here and there.
10	75	85	45	S. W. Sunshine, windy.
12	75	85	48	S. W. Cloudy and windy.
2	64	85	49	S. W. Ditto.
4	66	85	47	S. W. Ditto.
9	—	—	42	S. W. Cloudy, dark, windy.

The frames were uncovered in the morning about 8 o'clock,

8 o'clock, and covered up at 5 in the afternoon with about three inches thick of hay and mats. As soon as uncovered I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. Air was continued day and night.

*Tuesday, April 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	33	N. Great snowy clouds all over the air.
8	—	—	33	N. Some snow falls.
9	72	84	35	N. Ditto.
10	75	84	37	N.W. Scattered clouds.
11	88	85	38	N.W. Large towering clouds, and showers of snow.
12	89	85	40	N.W. Sunshine.
2	79	85	38	N.W. Showers of snow.
4	72	85	37	N.W. Ditto.
8	—	—	29	N.W. Clear, and but little wind.

The frames were uncovered just before 9 in the morning, and covered about 5 o'clock in the afternoon with about four inches thick of hay and mats. At 2 o'clock I went over the plants and stopped them, thinned their leaves, and set the fruit that were in blossom. When that was done, I took water about 80 degrees warm, and poured some of it on the flues, and some on the mould next to the flues. Air was continued all day, and a little left at each light all night.

*Wednesday*



*Wednesday, April 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	28	S.W. Clear, and a hoar frost.
8	72	82	32	S.W. Sunshine.
10	77	83	45	S.W. The sun shines faintly.
12	76	83	48	S.W. The sky is overcast with lofty foggy clouds, and the sun appears faintly.
2	68	82	40	S.W. It rains lightly.
3	65	82	38	S.W. Ditto.
4	64	82	37	S.W. Windy, and it continues raining.
6	—	—	35	S. High wind, and it rains.

The frames were uncovered about 8 o'clock in the morning, and covered up about 5 in the evening with about three inches thick of hay and mats. About noon I went over the plants and stopped them, thinned out some of the oldest leaves, picked off the showing fruit where too thick, and set those in blossom. Air was continued till near 4 in the afternoon, when the lights were shut down, and remained so all night.

*Thursday, April 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. Windy, and a small rain.
8	70	80	48	S.W. Cloudy and windy.
10	72	80	50	S.W. Ditto.
12	74	81	53	S.W. Showery, windy.
2	70	81	53	S.W. Ditto.
3	71	81	53	S.W. Great clouds, stormy.
5	74	81	48	S.W. The sun shines, and it rains.
7	—	—	44	S.W. Great showery clouds.
9	—	—	44	S.W. Heavy showers.

The frames were uncovered about half past 8  
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in the morning, and covered up about 5 in the afternoon with three inches thick of hay and mats. At noon the plants were stopped, their leaves thinned, and the fruit in blossom set. The north side lining was raised with new dung. But little air was given in the day-time, and less during the night.

*Friday, April 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	36	N.W. Cloudy, and a cold wind.
9	75	82	40	N.W. Ditto. [clouds.
10	73	82	41	N.W. Great towering snowy
11	81	82	38	N.W. A heavy shower of hail.
1	76	82	37	N.W. Gusts of wind, and show-
2	75	82	38	N.W. Ditto. [ers of hail.
4	70	83	37	N. Great frosty-like clouds.
7	—	—	32	N. Clear, and but little wind.
9	—	—	29	N. Ditto.

The frames were uncovered at 9 in the morning, and covered up between 4 and 5 o'clock in the afternoon with about three inches thick of hay and mats. Air was admitted day and night. In the forenoon I stopped the plants, thinned their leaves, and set the fruit that I found in bloom.

*Saturday, April 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	27	W. Thin clouds in the hori-
8	72	81	32	W. Sunshine. [zon.
10	87	82	42	N. Scattered clouds, near
12	86	84	46	N. E. Ditto. [calm.
1	87	85	48	N. E. Sunshine.
4	85	85	47	N. E. Clouds here and there.
6	—	—	40	N. E. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the



the morning, and covered up about 5 in the afternoon with hay and mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Plenty of air was given in the daytime, and the lights were shut close down all night.

*Sunday, April 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	S. Thin streaky clouds.
8	78	85	47	S. Ditto.
10	81	85	49	S. The sun shines faintly.
11	88	85	53	S.W. Ditto.
1	90	86	55	S.W. Sunshine.
2	82	86	54	S.W. Ditto.
4	86	86	53	S.W. Ditto.
9	—	—	39	S. E. Clear.

The frames were uncovered about 8 o'clock in the morning, and covered up a little before 6 in the evening with double mats. Air was admitted in the daytime plentifully, and a little left all night.

*Monday, April 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	34	S. E. The air is overcast with thin clouds.
8	70	80	46	S. E. Sunshine.
10	82	81	51	S. E. Ditto.
12	84	84	55	S. E. The sun shines faintly.
2	86	85	55	S. E. Ditto.
4	80	84	54	S. E. Sunshine.
8	—	—	39	E. Clear and calm.

The frames were uncovered about half past 7 o'clock in

in the morning, and covered at 5 in the afternoon with double mats. In the morning I went over the plants and stopped them, thinned their leaves, and set the fruit in blossom. In the afternoon the plants were watered moderately with water warmed to about 80 degrees. Air was admitted plentifully in the day-time, and a little left all night.

*Tuesday, April 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	34	S. E. Clear, and a white frost.
6	—	—	40	S. E. Thin clouds near the hori-
7	72	80	47	S. E. Sunshine. [zon.
10	80	82	52	S. E. Ditto.
12	87	84	57	S. E. Ditto.
2	85	84	59	S. E. Ditto.
3	80	84	61	S. E. The sun shines faintly.
4	79	84	59	S. E. Ditto.
6	—	—	56	S. E. Ditto.
8	—	—	46	S. E. Thin high clouds and lower small black ones come slowly from the south-west.

The frames were uncovered at 7 o'clock in the morning, and covered about 6 in the evening with double mats. The plants were stopped, their leaves thinned, the weeds picked out, the fruit in blossom set, and where the fruit were showing too thick, the worst and weakest of them were nipped off. Air was admitted day and night.

*Wednesday,*



*Wednesday, April 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	42	W. Cloudy.
8	75	81	50	W. Ditto.
10	90	83	57	W. The sun shines faintly.
12	84	84	62	N. Smoaky-like clouds all over the air.
2	82	84	61	N. The sun glimmers.
3	80	84	58	N. Great black clouds in the south-west, and it thunders.
4	75	83	55	N. E. Cloudy, and nearly calm.
8	—	—	44	N. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up at 5 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in bloom set. At four in the afternoon water was sprinkled all round the insides of the frames, and on the bare parts of the flues, and on the mould next to the flues. The lights were then shut down for the night.

*Thursday, April 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	N. Cloudy and gloomy.
9	72	81	42	N. It rains lightly.
10	70	81	43	N. Ditto.
12	70	81	47	N. Gloomy.
2	77	81	42	N. Cloudy.
4	75	81	48	N. Ditto.
8	—	—	43	N. The moon shines faintly.

The frames were uncovered at 9 o'clock in the morning,

morning, and covered up at 5 in the afternoon with double mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 10 o'clock in the morning, and continued till 4 in the afternoon, when the lights were shut down for the night.

*Friday, April 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	42	W.	Clouds here and there.
7	69	79	47	W.	Cloudy.
10	84	79	60	W.	The sun glimpses.
12	82	80	62	W.	Ditto.
2	75	81	61	W.	Ditto.
3	79	81	58	S.W.	Ditto.
6	72	81	53	S.W.	Ditto.
8	—	—	44	S.W.	Clouds in the horizon.

The frames were uncovered at 7 o'clock in the morning, and covered up at 6 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in bloom set. Air was given plentifully till 4 o'clock. To-day I had a fresh lining applied to the south side of the bed. There was no heat in the old lining, it was therefore all wheeled away except a little dung which was lately laid on the top of it, and which was laid aside, and shaken into the foundation of the new lining. The new lining was made with dung taken from among the cow-cribs. To-day I began to cut melons.

*Saturday,*



*Saturday, April 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	43	S. E. Cloudy, and but little
8	70	78	50	S. E. Ditto. [wind.
10	75	79	52	S. E. Cloudy, and a brisk wind.
12	75	79	57	S. E. Ditto.
2	77	80	56	S. E. Gloomy.
4	74	80	56	S. E. Cloudy, and a strong gale
6	—	—	48	S. E. Ditto. [of wind.

The frames were uncovered at 8 o'clock in the morning, and covered up about 5 in the afternoon with double mats. In the morning I stopped the plants, thinned their leaves, and set the fruit that I found in blossom. A little air was admitted in the day-time, and continued all night.

*Sunday, April 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	N. E. Cloudy, and a cold wind.
8	70	77	45	N. E. Ditto.
10	79	78	49	N. E. Light clouds.
11	84	80	52	N. E. The sun shines faintly.
1	82	82	56	N. E. Scattered smoaky-like
3	80	81	58	N. E. Ditto. [clouds.
5	82	81	57	N. E. Sunshine.
8	—	—	42	N. E. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with mats. Air was admitted day and night.

*Monday, April 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	36	S.W. Sunshine.
7	70	80	45	S.W. The sun shines faintly.
10	81	81	53	S.W. Thin clouds, and a brisk gale of wind.
12	78	81	53	S.W. Cloudy and windy.
2	70	81	53	S.W. Windy, and a small driv-
4	68	81	52	S.W. Ditto. [ing rain.
8	—	—	45	S.W. Clear, and a brisk wind.

The frames were uncovered at 7 o'clock in the morning, and covered between 5 and 6 in the afternoon with mats. In the morning I stopped the plants, thinned out some of their leaves, and set the fruit in blossom. The south side lining, being sunk, was raised with hot dung. Air was continued day and night.

*Tuesday, April 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	38	S.W. Clear, and but little wind.
6	—	—	42	S.W. Ditto.
8	69	80	49	S.W. Flying clouds; the sun
10	80	81	55	S.W. Ditto. [glimmers.
12	80	83	59	S.W. Cloudy, it looks rainy.
3	77	83	58	S.W. Some drops of rain fall.
5	70	83	57	S. Windy, and some rain.
8	—	—	50	S. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up about 5 in the afternoon with double mats. In the morning I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was admitted in the day-time, but the lights were shut close down all night.

*Wednesday,*



*Wednesday, May 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
5	—	—	45	W.	Flying clouds, wind high; there had been a fine rain in the night.
8	70	82	50	W.	Flying clouds, and light
10	77	83	55	W.	Ditto. [showers.
12	75	83	59	S.W.	Cloudy, windy.
2	77	83	58	S.W.	Ditto. [then.
4	70	84	55	S.W.	The sun shines now and
6	—	—	49	S.W.	Showers of rain; the wind is fallen.

The frames were uncovered at 8 o'clock in the morning, and covered up at 5 in the afternoon with double mats. In the morning I stopped the plants, picked off the showing fruit where they were too thick, thinned their leaves, and set the fruit that I found in blossom. At 3 o'clock water about 60 degrees warm was poured on every part of the flues. Air was admitted day and night.

*Thursday, May 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
5	—	—	43	W.	Thin clouds cover the sky.
8	70	82	50	W.	Showery.
10	71	82	51	W.	Ditto. [of wind.
12	72	82	45	W.	Heavy showers, and gusts
1	73	82	48	W.	A heavy shower of large hail.
2	80	83	48	N.W.	Windy, and great show-
3	75	83	47	N.W.	Ditto. [ery clouds.
5	70	83	45	N.W.	Ditto.
8	—	—	41	N.W.	Clouds here and there.

The frames were uncovered a little past 8 in

in the morning, and covered up in the afternoon about 5 o'clock with double mats. In the forenoon the plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night. The south side lining, being funk, was raised with fresh dung.

*Friday, May 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	34	W. Clear, and nearly calm.
8	67	81	43	W. Scattered clouds.
10	80	82	49	N.W. Ditto.
12	85	83	52	N.W. Scattered great snowy-like clouds.
2	76	83	53	N.W. Cloudy, and a brisk wind.
4	73	83	52	N.W. Ditto.
6	68	83	50	N.W. Ditto.
8	—	—	47	N.W. Cloudy, nearly calm.

The frames were uncovered a little before 8 o'clock in the morning, and covered up about 6 in the evening with double mats. In the morning I stopped the plants, set the fruit in blossom, and thinned their leaves. Air was continued day and night.

*Saturday, May 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	40	S.W. The sun appears through foggy clouds.
8	73	83	48	S.W. The sun shines faintly.
10	80	84	56	S.W. Scattered clouds.
11	83	84	60	S.W. Ditto.
12	78	84	59	S.W. Cloudy.
2	80	84	57	S.W. Ditto.
4	73	84	53	S.W. Ditto.
8	—	—	45	S.W. Ditto.

The frames were uncovered about 8 o'clock in the



the morning, and covered up in the afternoon at 5 o'clock with mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given in the day-time, but the lights were shut down all night.

*Sunday, May 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	44	S.W. Cloudy; there had been rain in the night.
6	—	—	48	S.W. Cloudy, windy.
8	72	83	50	W. Scattered clouds, windy.
10	75	83	49	W. Cloudy, windy.
11	77	84	50	W. Ditto.
1	76	85	55	N.W. Ditto.
2	80	85	56	N.W. Scattered clouds.
4	75	85	53	N.W. Ditto.
10	—	—	40	N.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up about 5 in the afternoon with double mats. Air was admitted in the day-time, but the lights were shut close down about 5 in the afternoon.

*Monday, May 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	36	N.W. Clear, and nearly calm.
7	69	82	40	N.W. Sunshine.
10	84	85	49	N.W. Ditto.
12	87	86	56	N.W. Dusty-like clouds arise
2	80	86	55	N. Cloudy. [in the north.
4	76	86	54	N. Ditto.
6	—	—	51	N. Ditto.

The frames were uncovered about 7 o'clock in the morning,

morning, and covered up at 5 in the evening with double mats. Air was given in the day-time, but none during the night.

*Tuesday, May 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	40	N. Cloudy, gloomy.
8	74	84	44	N. Scattered clouds, and light
10	80	84	48	N. Ditto. [showers.
12	75	85	52	N. Ditto.
2	75	85	50	N. Cloudy, nearly calm.
4	77	85	48	N. Showery.
8	—	—	45	N. Clear; the air looks frosty.

The frames were uncovered at 8 o'clock in the morning, and covered up between 5 and 6 in the evening with mats. In the forenoon the plants were stopped, their leaves thinned, the fruit in blossom set, and the weeds picked out of the mould. About noon the plants were well watered, with water near 80 degrees warm. The water was given out of pots with roses on them, and it was poured in between the leaves, so that the leaves were not much wetted nor weighed down thereby; but every part of the mould was well watered, and plenty was poured on the flues. Air was admitted from 9 o'clock in the morning till 5 in the afternoon, when the lights were shut down for the night. The south side lining being sunk was raised with hot dung.

*Wednesday,*



*Wednesday, May 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	41	E. Foggy, nearly calm.
8	77	83	49	E. The sun glimmers.
10	83	84	54	E. Scattered clouds.
12	80	85	58	S. E. Ditto.
2	78	86	60	S.W. Ditto.
4	76	86	55	S.W. Cloudy, nearly calm.
8	—	—	48	S.W. Clear, nearly calm.

The frames were uncovered before 8 o'clock in the morning, and covered between 5 and 6 in the evening with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted at 8 o'clock in the morning, and continued day and night.

*Thursday, May 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	45	S.W. It rains, and there had been a good deal in the night.
8	68	82	50	S.W. Cloudy, gloomy.
10	69	82	51	S.W. Showers of rain.
12	79	83	59	S.W. The sun glimpses.
2	81	84	61	S.W. Ditto.
4	78	84	60	S.W. Scattered clouds.
5	71	84	57	S.W. Ditto.
6	—	—	54	S.W. Showery.

The frames were uncovered about 8 o'clock in the morning, and covered about 5 in the afternoon with double mats. In the afternoon I stopped the plants, thinned out some of their leaves, and set the fruit that I found in blossom. Air was continued day and night.

*Friday,*

*Friday, May 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	40	S.W. Cloudy, and nearly calm.
8	72	82	50	S.W. Ditto.
10	79	83	56	S. Ditto.
12	80	83	61	S. Ditto.
1	75	83	61	S. It rains a little.
2	80	83	61	S. The sun shines faintly.
5	75	83	58	S. Cloudy, gloomy.
8	—	—	49	S. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up between 5 and 6 in the afternoon with double mats. At noon I stopped the plants, set the fruit in blossom, and thinned their leaves. In the afternoon the tiles and bricks that lay above the side flues for the plants to run on, were taken out, and all the flues covered with mould, and made on a level with the mould that was in the bed before, and put close home to the sides of the frames, and pressed down gently, making it of an equal firmness with the mould that the plants were growing in; the plants were then trained out on the fresh mould, and the lights shut close down for the night.

*Saturday,*



*Saturday, May 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	49	S. Cloudy, and nearly calm.
8	71	82	58	S. Showery-looking clouds.
10	77	82	60	S. E. The sun appears faintly.
12	81	84	67	S. E. Ditto.
2	80	84	66	E. Ditto.
5	68	83	58	E. Since 2 o'clock there have been light showers of rain.
6	—	—	57	E. Clouds, and the sun appears through them.
8	—	—	53	E. Gloomy.

The frames were uncovered about 8 o'clock in the morning, and covered up between 5 and 6 in the evening with double mats. In the forenoon I stopped the plants, thinned their leaves, and set the fruit that I found in blossom. Air was admitted day and night.

*Sunday, May 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	50	E. Cloudy, and nearly calm.
7	70	82	55	E. Sunshine.
9	89	84	60	E. Ditto.
10	89	85	65	E. Ditto.
12	90	86	71	N.E. Light clouds here and [there.
1	87	87	75	N.E. Ditto.
2	84	87	75	N.E. Bright sunshine.
4	82	87	71	N.E. Ditto.
8	—	—	60	N.E. Clear, and nearly calm.

The frames were uncovered about 7 o'clock in the morning, and covered up about 6 in the afternoon with

with mats. Air was admitted plentifully in the day-time, and about an inch left at each light all night.

*Monday, May 13, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

5	—	—	48	N. E. Much dew, misty, and a brisk wind.
8	70	84	52	N. E. Light foggy clouds.
10	88	85	60	N. E. Sunshine, brisk gale of
12	87	87	67	N. E. Ditto. [wind.
1	82	87	68	N. E. Ditto.
2	87	87	71	N. E. Bright sunshine.
3	89	88	72	N. E. Ditto.
5	83	86	68	N. E. Sunshine, windy.
6	—	—	63	E. Clouds here and there.

The frames were uncovered about 8 o'clock in the morning, and covered up in the afternoon about half past 5 with double mats. In the morning I went over the plants and stopped them, thinned their leaves, set the fruit in blossom, and picked off the worst fruit where they were showing too thick. About 3 o'clock the plants were well watered with water which had stood in the sun till it was 70 degrees warm. Great plenty of air was admitted in the day-time, and a little was left at each light all night.

*Tuesday,*



*Tuesday, May 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	42	N. E. Clear, and a brisk wind.
7	69	83	48	N. E. Sunshine, windy.
9	78	83	52	N. E. Ditto.
10	84	85	55	N. E. Ditto.
12	85	87	58	N. E. Ditto.
2	81	87	60	N. E. Ditto.
4	83	87	59	N. E. Clouds here and there.
5	78	87	58	N. E. Ditto.
8	—	—	50	N. E. Clear, and nearly calm.

The frames were uncovered about 7 o'clock in the morning, and covered up a little before 6 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given plentifully day and night.

*Wednesday, May 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	47	W. Clear, and a brisk air of
7	73	85	50	W. Sunshine. [wind.
9	82	85	55	N.W. Ditto.
10	85	86	59	N.W. Ditto.
12	83	87	66	N.W. The air is overcast with light clouds.
2	83	87	63	N.W. Cloudy, and a brisk wind.
5	74	86	59	N. Ditto.
7	—	—	53	N. E. Ditto.

The frames were uncovered about 7 o'clock in the morning, and covered up between 5 and 6 in the afternoon with double mats. In the morning the  
O plants

plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given plentifully all the day, and a little left at each light all night.

*Thursday, May 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	84	40	N. E. Light flying clouds, brisk gale of wind.
9	82	85	50	N. E. Sunshine, windy.
10	84	86	55	N. E. Ditto.
12	84	87	58	N. E. Ditto.
1	82	87	58	N. E. Ditto.
2	84	87	60	N. E. The sky is overcast with light clouds.
4	73	79	61	N. E. The wind is fallen.
6	78	81	59	N. E. Light clouds, nearly calm.
8	—	—	55	N. E. Ditto.

The frames were uncovered at 6 o'clock in the morning, and covered up at 6 in the afternoon with double mats. In the morning the plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. The plants were shaded with thin mats from about 12 till 2 o'clock, and about 3 o'clock they were well watered: The water was about 65 degrees warm, and was poured all over the plants, and against the sides of the frames to wash and sweeten them; to each three-light frame of plants was given a hoghead of water. Air was continued all the day, and a little left all night.

*Friday,*



*Friday, May 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	73	83	50	W.	Foggy clouds all over
9	79	84	58	N.W.	Ditto. [the air.
10	81	84	62	N.W.	Ditto.
12	76	84	63	N.W.	Ditto.
2	80	85	63	N.W.	Ditto.
4	87	86	65	N.W.	The sun shines now and then.
7	—	—	52	N.W.	It has rained since 6
8	—	—	52	N.W.	Fair, hazy. [o'clock.

The frames were uncovered about 6 o'clock in the morning, and covered up between 5 and 6 in the evening with double mats. In the morning I went over the plants and stopped them, thinned their leaves, set the fruit that I found in bloom, and rubbed off several young fruit where they were showing too thick. Air was admitted all the day, but the lights were shut close down all night.

*Saturday, May 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	73	85	46	N. E.	Cloudy, and a brisk wind.
8	75	85	50	N. E.	The sun shines faintly.
10	79	85	55	N. E.	Scattered clouds.
12	81	86	58	N. E.	Cloudy.
1	80	86	63	N. E.	Ditto.
4	75	85	59	N. E.	Showery-like clouds.
6	77	86	52	N. E.	Gloomy.
8	—	—	49	N. E.	Light clouds.

The frames were uncovered about 6 o'clock in the morning, and covered up at 6 o'clock in the after-

noon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given in the day-time, and the lights shut down all night.

*Sunday, May 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	41	N. Cloudy, and a cold wind.
8	70	84	44	N. Gloomy and cold.
10	75	84	49	N. Light clouds.
12	78	84	55	N.E. Ditto.
2	82	85	56	N.E. Ditto.
4	78	85	53	N.E. Cloudy and windy.
5	83	86	51	N.E. Sunshine.
9	—	—	42	N.E. Clear, and a brisk wind.

The frames were uncovered about 8 o'clock in the morning, and covered up about half past 5 in the afternoon with double mats. But little air was admitted in the day-time, and the lights were shut down all night.

*Monday, May 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	35	N.E. Clear, and a white frost.
7	71	83	42	N.E. Sunshine, and a brisk
9	78	83	49	N.E. Ditto. [wind.
10	80	84	52	N.E. Scattered light clouds.
12	87	86	59	N.E. Sunshine.
2	85	86	60	N.E. Ditto.
4	90	86	58	N.E. Small clouds here and there.
5	87	87	56	N.E. Bright sunshine.

The frames were uncovered about 7 o'clock in the morning, and covered up between 5 and 6 in the



the afternoon with double mats. In the morning I stopped the plants, thinned their leaves, set the fruit in blossom, and thinned the fruit where they were showing too thick. Air was given plentifully in the day-time, but the lights were shut close down all night.

*Tuesday, May 21, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

5	—	—	41	N. E. Foggy clouds come from the north-east.
7	74	84	45	N. E. Sunshine, and a brisk
9	80	84	53	N. E. Ditto. [wind.
10	87	55	58	N. E. Ditto.
11	90	86	62	N. E. Ditto.
12	90	87	65	N. E. Ditto.
2	89	88	66	N. E. Scattered clouds, windy.
4	93	88	64	N. E. Ditto.
6	—	—	55	N. E. Clear, and windy.
8	—	—	49	N. E. Ditto.

The frames were uncovered about 7 o'clock in the morning, and covered up between 4 and 5 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Plenty of air was admitted in the day-time, and a little left all night at each light. The linings being sunk were raised all round with hot dung.

At noon I held among the water in the spring, a thermometer, and it fell, and stood at 45, and when I held it in the water running from the pipe it rose, and stood at 52. I then plunged it in the pond

in the water exposed to the sun and air, and it rose, and stood at 64. After that I set the thermometer on the ground upright, on a south border exposed to the sun, close by a row of peas in blossom, and it soon rose, and stood at 100. In walking about the fields between 12 and 1 o'clock with a thermometer hanging in my hand, it kept rising and falling between 65 and 70 degrees.

*Wednesday, May 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	N. E. Cloudy, and a cold wind.
9	74	85	48	N. E. Ditto.
10	84	86	50	N. E. The sun shines faintly.
12	83	86	56	N. E. Thin clouds.
2	85	87	57	N. E. Sunshine.
4	79	86	55	N. E. Cloudy, and a brisk gale
6	75	86	51	N. E. Ditto. [of wind.
8	—	—	46	N. E. Ditto.

The frames were uncovered just before 9 o'clock in the morning, and covered up in the afternoon about 6 with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Between 2 and 3 o'clock plenty of water was poured upon the mould above the flues, but there was none given to the mould near the stems of the plants. Air was given in the day-time, but the lights were shut close down all night.

*Thursday,*



*Thursday, May 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	42	N. E. Foggy light clouds.
8	75	84	49	N. E. Ditto.
10	85	85	57	N. E. Sunshine.
12	87	87	66	N. E. Clouds here and there.
2	84	87	67	N. E. Ditto.
3	85	87	66	N. E. Ditto.
4	77	87	62	N. E. Sunshine.
5	75	87	62	N. E. Scattered clouds, near calm.
9	—	—	49	N. E. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up between 5 and 6 in the evening with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted plentifully in the day-time, and a little left all night at each light.

*Friday, May 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	N. E. Foggy, and nearly calm.
9	72	84	49	N. E. Ditto.
10	74	84	49	N. E. Foggy clouds, and a brisk
12	76	84	49	N. E. Ditto. [wind.
2	80	84	56	N. E. Ditto.
4	85	85	57	N. E. Scattered clouds.
5	90	86	57	N. E. Ditto.
8	—	—	48	N. E. Clear, and a brisk gale of wind.

The frames were uncovered about 9 o'clock in the morning, and covered up in the afternoon between 5 and 6 with double mats. In the afternoon I

stopped the plants, thinned their leaves, and set the fruit in blossom. Air was admitted till 4 o'clock in the afternoon, when the lights were shut close down for the night.

*Saturday, May 25, 1793.*

Hours.	S.Th.	F.Th.	Ther.	Wind.
5	—	—	36	N. E. Foggy flying clouds.
7	72	84	44	N. E. Sunshine.
10	82	85	53	N. E. Scattered clouds, and a brisk wind.
12	87	87	60	N. E. Sunshine.
2	85	87	60	N. E. Scattered white clouds.
4	82	87	58	N. E. Ditto.
5	90	87	56	N. E. Thin clouds cover the sky.
8	—	—	51	N. E. Ditto, and a brisk gale of wind.

The frames were uncovered about 7 o'clock in the morning, and covered up between 5 and 6 in the afternoon with double mats. In the morning the linings were raised with fresh dung, the plants were stopped, their leaves thinned, and the fruit in blossom set. In the day-time air was admitted plentifully, and a little was left all night at each light.

*Sunday,*



*Sunday, May 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	43	N. E. Bright sunshine.
7	74	85	44	N. E. Ditto.
9	85	87	51	N. E. Ditto.
10	90	87	54	N. E. Ditto.
1	80	87	68	N. E. The sky is overcast with light clouds.
2	83	87	67	N. E. Thin clouds, and a brisk gale of wind.
3	80	87	62	N. E. Gloomy.
4	74	87	55	N. E. Ditto.
8	—	—	48	N. E. Clear, and a brisk gale of wind.

The frames were uncovered about 7 o'clock in the morning, and covered up about 5 in the afternoon with double mats. Air was given plentifully in the day-time, and a little left all night.

*Monday, May 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	43	N. E. Foggy clouds, and a brisk
7	72	84	45	N. E. Ditto. [wind.
8	80	85	48	N. E. Ditto.
11	90	87	61	N. E. Sunshine.
1	86	87	69	N. E. The air is overcast with
2	80	87	70	N. E. Ditto. [light clouds.
3	65	70	68	N. E. Cloudy, and near calm.
4	75	74	64	N. E. Gloomy; the clouds look rainy.
9	—	—	55	N. E. Clouds here and there.

The frames were uncovered about 7 o'clock in the morning, and covered up between 5 and 6 in the afternoon

noon with about 3 inches thick of hay and mats. In the morning the plants were stopped, their leaves thinned, the weeds picked out, and the fruit in blossom set. Between 2 and 3 o'clock I gave the plants a plentiful watering with water about 65 degrees warm. I gave to each three-light frame about half a hoghead, and when the watering was finished, the lights were shut close down for the night.

*Tuesday, May 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	45	S.W. Foggy, and a brisk wind.
7	79	85	53	W. Cloudy.
10	83	86	62	W. The sun glimpses.
12	85	87	65	N.W. Cloudy, and a brisk wind.
2	83	87	67	N.W. Cloudy, and nearly calm.
3	88	87	66	N.W. Scattered clouds.
5	81	88	62	N.W. Ditto.
6	—	—	59	N.W. Sunshine.
8	—	—	53	N.W. Clear, and nearly calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the afternoon about half past 5 with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted about 8 o'clock in the morning, and increased gradually, and at 5 o'clock in the afternoon the lights were shut close down for the night. The south side lining, being sunk, was raised with hot dung.

*Wednesday,*



*Wednesday, May 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	86	42	N. Sunshine, and a brisk wind
8	73	86	44	N. Great showery-like clouds
10	81	87	48	N.W. Scattered clouds. [arise.
12	79	87	54	N.W. Ditto.
2	82	88	55	N.W. Ditto.
4	79	88	54	N.W. Cloudy, and a brisk wind.
5	81	88	51	N.W. Ditto.
8	—	—	46	N.W. Clouds here and there; nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up at half past 5 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in bloom set. About 4 o'clock in the afternoon water was poured plentifully all round about against the insides of the frames to sweeten the flues, so that therefrom a kindly steam might arise during the night to nourish and invigorate the plants. Air was admitted at 7 o'clock in the morning, and continued all day, and a little left all night.

*Thursday,*

*Thursday, May 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	38	N. Clear, and a brisk wind.
6	68	85	39	N. Sunshine.
8	76	85	45	N.W. Scattered clouds.
10	80	86	46	N.W. Ditto.
12	88	87	52	N.W. Sunshine.
1	89	88	54	N.W. Ditto.
2	88	89	54	N.W. Scattered clouds.
4	87	89	52	N.W. Ditto. [clouds.
5	86	90	49	N.W. Stormy, and great white
7	—	—	46	N.W. Clear, and nearly calm.
8	—	—	43	N.E. Ditto.

The frames were uncovered about 6 o'clock in the morning, and covered up about 5 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted till near 5 o'clock in the afternoon, when the lights were shut close down for the night.

*Friday, May 31, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	33	S.W. Clear, and a white frost.
7	73	86	41	W. Clouds here and there.
10	86	87	50	W. Scattered clouds.
12	83	88	57	W. Cloudy, and a brisk wind.
2	85	88	58	W. Scattered clouds; a few drops of rain fall.
4	91	89	59	W. Scattered clouds.
5	89	90	57	W. Ditto. [south-west.
8	—	—	50	N.W. Great black clouds in the

The frames were uncovered at 7 o'clock in the morning,



morning, and covered up about 5 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given about 8 o'clock in the morning, and continued till 5 in the afternoon, when the lights were shut close down for the night.

*Saturday, June 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	86	44	W. Clear, and a brisk wind.
8	80	87	50	S.W. Sunshine.
10	85	88	57	S. Scattered clouds.
12	89	89	61	S. Sunshine.
1	89	91	64	S. Ditto
2	89	91	65	S. Thin streaky clouds.
4	79	90	64	S. Ditto.
6	—	—	61	S. Ditto.
8	—	—	55	S. Cloudy, gloomy, calm.

The frames were uncovered at 6 o'clock in the morning, and covered up about 6 in the afternoon with double mats. In the morning I went over the plants and stopped them, thinned out their leaves, set the fruit in blossom, and nipped off here and there several of the young fruit where I found them set too thick. Air was admitted a little before 8 o'clock in the morning, and continued till 4 in the afternoon; then I poured water plentifully on the mould above the flues, and against the sides of the frames. The water raised the thermometer to 65 degrees.

*Sunday,*

*Sunday, June 2, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	53	S.	Cloudy and windy.
8	77	87	58	S.	Ditto.
10	75	87	59	S.	Ditto.
11	80	87	60	S.	Ditto.
2	76	87	62	S. E.	Cloudy; a few drops of rain
4	74	87	60	S. E.	Cloudy, windy. [fall.
9	—	—	54	S. E.	The wind is fallen.

The frames were uncovered about 8 o'clock in the morning, and covered up about 6 in the evening with double mats. Air was given from 8 in the morning till 4 in the afternoon, when the lights were shut down for the night.

*Monday, June 3, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	78	86	54	S.	Clear, and nearly calm.
8	79	86	59	S.W.	Clouds here and there.
10	82	87	69	S.W.	Sunshine.
11	84	88	69	S.W.	Ditto.
12	85	88	69	S.W.	Scattered clouds.
2	83	88	70	S.W.	Ditto.
4	95	89	68	S.W.	Sunshine, near calm.
7	—	—	62	S.W.	Ditto.
9	—	—	54	S.W.	Clear and calm.

The frames were uncovered about 6 o'clock in the morning, and covered up a little before 6 in the afternoon with mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. In the afternoon, between 3 and 4 o'clock, I gave each light of plants two pot-fulls of water about



about 63 degrees warm, all over their leaves. Air was given at 7 o'clock in the morning, and continued till 7 in the evening, when it was taken away for the night.

*Tuesday, June 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	55	S.E. Thin light clouds here
6	76	87	57	S.E. Ditto. [and there.
8	80	88	62	S. Ditto.
10	82	88	70	S. Ditto.
11	84	89	74	S. Scattered clouds.
12	85	89	78	S. The sun shines faintly.
2	83	89	75	S. Cloudy, and nearly calm.
3	86	89	76	S. The sun glimmers.
4	85	89	73	S.W. Ditto.
6	—	—	68	S.W. Cloudy, and nearly calm.
9	—	—	59	S.W. Ditto.

The frames were uncovered at 6 o'clock in the morning, and covered up about half past 5 in the afternoon with mats. In the morning I stopped the plants, thinned their leaves, picked off several small fruit where they were set too thick, and set the fruit in blossom. Air was given at 7 o'clock in the morning, and continued till between 4 and 5 in the afternoon, when the lights were shut close down for the night.

*Wednesday,*

*Wednesday, June 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	52	S.W. Light clouds here and
6	76	86	55	S.W. Sunshine. [there.
8	85	88	69	S. E. Clouds here and there.
10	86	89	74	S. E. The sun shines faintly.
11	79	88	70	S. Cloudy, gloomy; a few drops of rain fall.
12	82	88	71	S. A light shower of rain.
2	83	89	73	S.W. Cloudy, and nearly calm.
3	82	89	73	S. Ditto.
4	84	89	71	S. Sunshine.
5	85	89	69	S.W. Clouds here and there.
9	—	—	59	S. Clear, and nearly calm.

The frames were uncovered at 6 o'clock in the morning, and covered up just before 6 in the afternoon with single mats.

In the morning I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was admitted at 7 o'clock in the morning, continued all day, and a little left at each light all night.

*Thursday, June 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	52	S.W. Cloudy, and a brisk wind.
6	72	86	55	S.W. Ditto.
8	80	86	60	S.W. The sun shines faintly.
10	83	87	65	S.W. Ditto.
11	83	87	71	S.W. Cloudy.
12	75	87	68	S.W. A few drops of rain fall.
2	75	87	66	S.W. Gloomy.
4	76	87	62	S.W. It rains lightly.
5	75	87	60	S. It rains gently.
9	—	—	55	S. Cloudy, and a brisk wind.

The frames were uncovered at 6 o'clock in the morning,



morning, and covered up a little before 6 in the afternoon with single mats. In the morning I stopped the plants, thinned their leaves, and set the fruit in blossom. At noon plenty of water was poured upon the mould above the flues, and against the sides of the frames, and just before covering up the plants were sprinkled all over till their leaves were well wetted. Air was given all day till about 6 o'clock in the afternoon, when the lights were shut down for the night.

*Friday, June 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	—	—	55	S.W. Clear in the west, cloudy in the east.
6	72	84	56	S.W. Cloudy, gloomy.
8	77	84	58	S.W. Scattered clouds, nearly
10	83	85	62	S.W. Ditto. [calm.
11	86	86	66	S.W. Ditto.
12	85	87	71	S.W. Great clouds, and gusts of
1	85	87	71	S.W. Ditto. [wind.
2	85	87	70	S.W. Ditto.
4	80	87	68	S.W. Sunshine.
8	—	—	57	S.W. Clear, and a brisk wind.
9	—	—	53	S.W. Ditto.

The frames were uncovered about 6 o'clock in the morning, but there was no covering put on in the evening. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. The linings were raised all round with hot dung. At 5 o'clock in the afternoon with water about 67 degrees warm, I watered the plants all over till their leaves were well wetted.

P

*Saturday,*

*Saturday, June 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	84	56	S.W. Cloudy, and a brisk wind.
8	78	84	59	S.W. Ditto.
10	80	85	61	S.W. Showery-like clouds.
12	85	85	64	S.W. Windy, and large clouds here and there.
2	83	85	64	S.W. A light shower.
5	84	86	62	S.W. Squally.
7	76	86	58	S.W. Cloudy and windy.
9	—	—	56	S.W. Showery-like clouds.

In the morning the plants were stopped, their leaves thinned, the weeds picked out, and the fruit in blossom set. Air was given between 7 and 8 in the morning, and continued till about 5 in the afternoon, when the plants were sprinkled with water, and the lights shut close down for the night. To-day we gathered peas for the first time this season; they were sown in December on a south-wall border, in a row 6 feet distance from the wall.

*Sunday, June 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	68	83	50	S.W. Clear, and a brisk gale of wind.
8	83	83	54	S.W. Clouds come swiftly from the south-west.
10	82	83	58	S.W. Cloudy and windy.
1	82	84	64	S.W. Ditto.
2	83	84	65	S.W. The sun shines now and
4	88	86	64	S.W. Sunshine. [then.
8	77	86	55	S.W. Clouds here and there; the wind is fallen.

Air was admitted at 8 o'clock in the morning, and continued



continued till between 4 and 5 in the afternoon, when the lights were shut down for the night.

*Monday, June 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	65	83	48	S.W. Clear, and a brisk wind.
8	80	83	56	S.W. Clouds come swiftly from the south-west.
10	78	83	61	S.W. Scattered clouds.
12	80	85	64	S.W. Ditto.
2	82	85	66	S.W. Clouds here and there.
4	79	85	64	S.W. The sun glimpses.
6	67	82	58	S.W. Ditto.
8	—	—	52	S.W. Some clouds, nearly calm.

Air was admitted about 8 o'clock in the morning, when I stopped the plants, thinned their leaves, and set the fruit in blossom. Between 5 and 6 in the afternoon I gave the plants of each three-light frame about half a hoghead of water, which I poured all over their leaves out of wide rosed water-pots; but I poured on most above the flues and against the sides of the frames; the water was 64 degrees warm. When the watering was finished the lights were shut close down, and covered up with about 4 inches thick of hay and mats.

*Tuesday, June 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	77	84	50	S.W. The sky is covered with thin streaky clouds.
8	81	85	59	S.W. Cloudy.
10	82	85	63	S.W. Ditto.
12	85	86	66	S.W. The sun shines.
2	87	87	69	S.W. Clouds here and there.
4	88	88	67	S.W. Ditto.
6	86	88	64	S.W. Cloudy, and nearly calm.
9	—	—	55	S.W. Ditto.

The frames were uncovered about 6 o'clock in the morning, and covered up in the afternoon about half past 5 with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 7 o'clock in the morning, and continued till 5 in the afternoon, when the lights were shut down for the night.

*Wednesday, June 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	74	86	48	W. Clear, and a brisk wind.
8	79	86	52	W. Scattered clouds.
10	83	87	57	W. Cloudy.
12	89	88	65	N.W. Light clouds.
2	86	88	64	N.W. Ditto.
4	88	89	62	N.W. Scattered clouds.
6	—	—	59	N.W. Ditto.
9	—	—	55	N.W. Cloudy, and nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up about half past 5 with double mats. In the morning I stopped the plants, thinned their leaves, and set the fruit in blossom. Air

was



was admitted from 7 o'clock till 3 in the afternoon, when the plants were sprinkled with clean water, and the lights shut down for the night.

*Thursday, June 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	N. E. Cloudy, and a brisk wind,
8	80	87	55	N. E. Ditto.
10	83	87	58	N. E. Ditto.
12	83	87	59	N. E. Light clouds.
2	80	87	59	N. E. Ditto
4	78	87	55	N. E. Cloudy, and a brisk gale
6	77	87	52	N. E. Ditto. [of wind.
9	—	—	49	N. E. Ditto.

The frames were uncovered about 7 o'clock in the morning, and covered up about 5 in the afternoon with double mats. About noon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 8 o'clock in the morning, and taken away at 3 in the afternoon. To-day I had a new lining applied to the north side of the bed. The old lining being exhausted, there was no heat in it, but a warmth, and that derived from the south side lining; therefore I had it all removed, except only about six inches of the top of it, which was not quite exhausted, and which I had laid in the foundation of the new lining. The new lining was made of a mixture of cow and horse dung, which had lain in a heap for a few days till it had become very warm.

*Friday, June 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	84	46	N. Cloudy, and a brisk gale of
8	74	84	48	N. Ditto. [wind.
10	85	85	54	N. Ditto.
12	83	86	58	N. Ditto.
2	82	86	57	N. Ditto.
4	83	86	55	N. The sun glimmers.
5	82	87	55	N. Ditto.
8	—	—	48	N. Cloudy, and nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up about half past 5 in the afternoon with double mats. In the morning I stopped the plants, thinned their leaves, picked off the young fruit where they were set too thick, and set the fruit in blossom.

*Saturday, June 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	85	45	N.W. Thick close clouds cover
8	72	85	48	N.W. Ditto. [the sky.
10	80	85	54	N.W. The sun appears faintly.
12	83	86	61	N.W. Ditto.
2	87	88	60	W. Sunshine.
4	89	89	61	S.W. Ditto.
6	84	89	55	S.W. Gloomy; the clouds look
8	79	89	50	S.W. Ditto. [rainy.

The frames were uncovered about 6 o'clock in the morning, but no covering was put on for the night. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted about 9 o'clock in the morning, and continued till



ill between 4 and 5 in the afternoon, when the lights were shut down for the night. The north side lining, being sunk, was raised with fresh dung, and was made rather higher than the surface of the earth on the bed.

*Sunday, June 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	86	50	W. Light clouds, and a brisk
8	79	86	58	W. Ditto. [wind.
10	83	87	62	W. Ditto.
11	87	88	66	W. The sun shines faintly.
1	88	89	70	W. Ditto.
2	86	89	69	W. Ditto.
4	80	89	66	W. Cloudy, and a brisk gale of
6	—	—	55	W. It rains a little. [wind.
9	—	—	53	W. Fair, cloudy.

Air was given about 8 o'clock in the morning, and taken away at 4 in the afternoon. The frames were covered up at 5 in the afternoon with double mats.

*Monday, June 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	88	55	N.W. Cloudy, and a brisk wind.
8	76	88	56	N.W. A light shower of rain.
10	85	89	62	N.W. The sun glimpses.
12	86	90	68	N.W. Scattered clouds, windy.
1	70	78	69	W. Ditto.
2	84	84	67	W. Flying clouds, windy.
4	86	86	64	W. Ditto.
9	—	—	55	W. Clear, and a brisk gale of wind.

The frames were uncovered at 6 o'clock in the morning,

morning, and covered up about half past 5 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Between 12 and 1 o'clock I gave the plants a good soaking of water about 62 degrees warm; it was poured on all over their leaves out of wide rosed water-pots. Air was given about 8 o'clock in the morning, and continued till 4 in the afternoon, when the lights were shut close down for the night.

*Tuesday, June 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	73	89	45	N.W. Clear, and a strong gale of wind.
9	80	89	50	N.W. Scattered great clouds.
10	83	90	54	N.W. Ditto.
12	85	91	58	N.W. Ditto.
2	89	93	61	N.W. Light clouds.
5	85	93	59	N.W. Sunshine.
9	—	—	53	N.W. Gloomy.

The frames were uncovered at 6 o'clock in the morning, and covered up about half past 5 in the afternoon with double mats. In the morning I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was admitted between 8 and 9 o'clock in the morning, and continued till about 4 in the afternoon, when the lights were shut down for the night.

*Wednesday,*



*Wednesday, June 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	76	91	52	W. Cloudy; there had been a shower in the night.
9	80	92	56	W. A drizzling rain.
10	78	92	55	W. It rains gently.
12	88	93	55	W. The sun glimpses.
2	86	93	51	N. A light shower.
5	89	93	52	N. Scattered clouds.
9	—	—	49	N.E. Cloudy, and nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up at 5 in the afternoon with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted about 8 o'clock in the morning, and taken away about half past 4 in the afternoon.

*Thursday, June 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	47	N. Cloudy, and a cold wind.
7	76	91	49	N. Ditto.
10	76	91	50	N.W. Ditto.
12	78	91	50	N.W. Ditto.
2	80	91	52	N.W. Ditto.
4	80	91	52	N.W. Ditto.
5	81	91	53	N.W. Thin clouds, nearly calm.
9	—	—	46	N.W. Ditto.

The frames were uncovered about 7 o'clock in the morning, and covered up about half past 5 in the afternoon with mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. But little air was given in the day-time, and at 4 in

4 in the afternoon the lights were shut down for the night. The north side lining, being funk, was raised with new dung.

*Friday, June 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	89	45	N. Clear, and nearly calm.
8	82	89	51	N. The sun shines faintly.
10	90	90	56	N.W. Scattered clouds.
11	98	92	60	N.W. Sunshine.
12	90	93	63	N.W. Scattered light clouds.
2	88	93	64	W. Ditto.
4	85	93	64	W. Ditto.
9	—	—	55	W. Some clouds, nearly calm.

The frames were uncovered at 6 o'clock in the morning, and covered up about 5 in the afternoon with mats. In the morning I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was admitted at 8 o'clock in the morning, and increased plentifully, and a little left at each light all night.

*Saturday, June 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	W. Cloudy, and a brisk gale
8	70	88	53	W. Ditto. [of wind.
10	70	88	55	N.W. A light shower.
12	84	89	58	N.W. Cloudy.
2	85	90	60	N.W. Ditto.
4	83	91	59	N.W. The sun glimpses.
8	—	—	53	N. Gloomy.

The frames were uncovered about 8 o'clock in the morning,



morning, and covered up. between 5 and 6 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, the weeds picked out, and the fruit in blossom set. Air was continued day and night. About 11 o'clock to each three-light frame of plants I gave about half a hoghead of water, which was from 60 to 65 degrees warm; most of it was poured on above the flues and against the sides of the frames, but the leaves of the plants were wetted as little as possible. To-day we gathered strawberries in the open ground for the first time this season.

*Sunday, June 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	73	89	45	N.W. Clear, and a brisk gale of
10	85	90	57	N.W. Scattered clouds. [wind.
11	88	91	57	N.W. Sunshine.
1	90	93	62	N.W. Scattered clouds.
2	86	93	61	N.W. Ditto.
6	80	93	61	N.W. Ditto.
8	78	92	55	N.W. Cloudy, calm.

The frames were uncovered about half past 6 in the morning, and they were left uncovered all night. Air was continued day and night.

*Monday,*

*Monday, June 24, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	70	88	50	W. Cloudy, and a few drops of rain fall.
8	72	88	55	W. Cloudy, gloomy.
10	80	89	62	W. The sun glimpses.
12	74	89	62	W. A small rain.
2	73	89	56	W. Ditto. [of wind.
4	75	89	57	W. Cloudy, and a brisk gale
8	—	—	53	W. Cloudy, nearly calm.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. The linings, being sunk, were raised all round with fresh dung. The lights were covered up between 5 and 6 o'clock in the afternoon with double mats. Air was admitted till 4, and then the lights were shut down till 8 o'clock in the evening, when a little air was admitted at each light for the night.

*Tuesday, June 25, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	73	88	53	W. Cloudy.
8	76	88	59	W. Scattered clouds.
10	82	90	68	W. Ditto.
12	84	90	71	W. Cloudy, and nearly calm.
2	82	90	70	W. Gloomy.
3	81	91	69	W. Ditto.
6	77	91	63	S.W. Ditto.
9	—	—	57	S.W. Ditto.

The frames were uncovered at 6 o'clock in the morning, and covered up about 6 in the afternoon with single mats. In the morning the plants were stopped,



stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Wednesday, June 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	67	88	58	W. Cloudy, and a brisk wind; there had been a light rain in the night.
8	73	88	63	W. Cloudy, and a brisk wind.
10	84	89	69	W. Scattered clouds.
12	85	90	71	W. Ditto.
2	84	91	73	W. Sunshine.
3	84	91	72	W. Scattered clouds.
4	83	91	74	W. Sunshine.
6	80	91	67	W. Ditto.
9	—	—	59	W. Clear, and a brisk wind.

The frames were uncovered about 6 o'clock in the morning, and left without covering all night. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Plenty of air was given all day, and some left all night. The linings, being sunk, were raised with long dung.

*Thursday, June 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	62	87	49	W. Clear, and a brisk wind.
8	80	88	56	W. Scattered light clouds.
10	85	90	69	W. Ditto.
12	88	91	73	W. Ditto.
2	85	92	74	S.W. Ditto.
3	86	92	75	S.W. Ditto.
4	82	92	71	S.W. Ditto.
9	—	—	56	S.W. Clear, and nearly calm.

About noon the plants were gone over and stopped,

ped, their leaves thinned, and the fruit in blossom set, and at 3 o'clock water about 72 degrees warm was poured in all round the sides of the frames. Air was admitted plentifully till 5 in the afternoon, when the lights were shut down till 8, and then a little air was given for the night.

*Friday, June 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	68	87	56	S.W. Thin clouds.
8	74	88	60	S.W. Ditto.
10	80	89	63	S.W. Showery-like clouds.
12	85	90	67	S.W. Cloudy, and a brisk gale of wind.
2	89	91	71	S.W. Light clouds.
4	86	92	68	S.W. Sunshine.
6	—	—	65	S.W. Thin clouds cover the sky.
9	—	—	56	S.W. Ditto.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued till 5 in the afternoon, when the lights were shut down till 9, and then a little air was admitted for the night. At 6 o'clock in the evening the frames were covered up with single mats.

*Saturday,*



*Saturday, June 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	76	91	56	S. Cloudy, and a strong gale
8	76	91	58	S. Ditto. [of wind.
10	77	91	62	S. Light showers.
12	76	91	64	S. Flying clouds, and a strong
2	82	92	65	S.W. Ditto. [gale of wind.
4	90	93	67	S.W. Sunshine, windy.
9	—	—	55	S.W. Cloudy and windy.

The frames were uncovered at 6 o'clock in the morning. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Sunday, June 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	71	89	55	W. Cloudy, and a strong gale of wind.
8	70	90	60	W. Flying clouds, windy.
10	80	90	65	W. Ditto.
12	85	91	69	W. A light shower of rain.
2	83	92	63	W. Windy, and flying clouds.
5	82	92	66	W. Ditto.
9	—	—	56	W. Cloudy, the wind is fallen.

Air was continued all day, and the lights were shut down all night.

*Monday,*

*Monday, July 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	90	58	S.W. Cloudy and windy.
8	76	90	60	S.W. Ditto.
10	80	90	62	S.W. A drizzling rain.
12	76	92	70	S.W. Light clouds.
2	78	92	68	S.W. A small shower.
4	80	92	67	S.W. Scattered clouds.
9	—	—	56	S.W. Clear, and nearly calm.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted at 6 o'clock in the morning, and continued day and night.

*Tuesday, July 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	69	88	53	W. Light clouds, and a brisk wind.
8	78	88	58	W. Windy and cloudy.
10	72	89	63	W. Ditto.
12	80	90	70	W. Scattered clouds, windy.
1	81	91	71	W. Ditto.
2	80	91	69	W. Ditto.
5	71	91	66	W. Sunshine, windy.
9	—	—	55	W. Clear, and nearly calm.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted all the day plentifully, and a little left at each light all night.

*Wednesday,*



*Wednesday, July 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	68	87	51	W.	Clear, and a brisk wind.
8	80	88	58	W.	Sunshine.
10	85	89	67	W.	Scattered clouds.
12	85	91	73	W.	Ditto.
1	83	92	76	W.	The air is overcast.
2	82	92	74	W.	Thin clouds cover the
3	83	92	75	S.W.	Ditto. [sky.
4	80	92	74	S.W.	Ditto.
6	75	91	68	S.W.	Ditto.
9	—	—	60	S.W.	Cloudy, and a brisk wind.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. About 4 o'clock in the afternoon water 65 degrees warm was poured against the sides of the frames all round about, to moisten the flues and sweeten the air. Air was continued all day, and a little left all night.

*Thursday, July 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	67	87	57	S.W.	Cloudy, and a brisk wind.
8	78	88	62	S.W.	A few drops of rain fall.
10	80	89	69	S.W.	Ditto.
11	78	88	71	S.W.	Cloudy and windy.
12	77	88	69	S.W.	Ditto.
2	80	85	73	S.W.	The sun glimmers.
4	78	86	71	S.W.	Ditto.
6	85	87	69	S.W.	Cloudy, and a strong gale of wind.

To-day about noon I had about two inches thick of leaf mould sifted fine, laid over all the surface of the bed among the plants; it was laid in with the hand

hand carefully, and many of the oldest shoots were covered with it: When that was done I gave the plants a moderate watering all over their leaves, with water about 66 degrees warm. Air was given till 4 o'clock, when the lights were shut down till 6, and then a little air was admitted, and the lights covered up for the night with double mats. The linings being funk below the upper course of bricks were raised with moist dung.

*Friday, July 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	87	61	S.W. Thin clouds, and a brisk
8	79	87	67	S.W. Ditto. [gale of wind.
10	83	88	75	S.W. Sunshine, and a strong gale of wind.
12	90	90	81	S.W. Scattered clouds, windy.
1	89	91	78	S.W. Ditto.
2	94	92	80	S.W. Ditto.
4	92	92	80	S.W. Ditto.
5	88	92	78	S.W. Ditto.
8	82	92	70	S.W. Clear, and nearly calm.

The frames were uncovered at 6 o'clock in the morning, and then the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted plentifully all day till 8 o'clock in the evening, when the lights were shut close down for the night.

*Saturday,*



Saturday, July 6, 1793.

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	78	90	63	W.	Foggy low clouds, a brisk wind, and no dew.
8	80	90	68	W.	Bright sunshine, and a
10	88	92	80	W.	Ditto. [brisk wind.
11	90	93	83	W.	Ditto.
12	93	94	85	S.W.	Ditto.
1	96	95	84	S.W.	Ditto.
2	99	96	84	S.W.	Small clouds here and there, nearly calm.
4	87	96	86	S.W.	Ditto.
4½	96	96	88	S.W.	Ditto.
6	86	95	80	S.W.	Clear and calm.
9	—	—	71	S.W.	Ditto.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was plentifully admitted all day, and some left all night. Between 5 and 6 in the afternoon I gave to each frame of plants 6 small pots of water 75 degrees warm, which I poured all over their leaves in imitation of a shower of rain. To-day we gathered cherries for the first time this summer; they grew on an east aspect, but the tree is planted on the west side of the wall, and its branches are trained over the wall on the east side, and there the fruit ripens before those on the same tree, on the west aspect.

Q<sub>2</sub>

Sunday,

*Sunday, July 7, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	77	92	65	S.	Bright sunshine, not a cloud
8	88	93	72	S.	Ditto. [to be seen.
10	89	94	83	S.	Sunshine.
12	90	95	87	S.W.	Ditto.
1	91	95	89	S.W.	Ditto.
2	90	95	90	S.W.	Ditto.
4	93	96	88	S.W.	Ditto.
5	95	96	86	S.W.	Ditto.
9	—	—	75	W.	Clear, and nearly calm.

Air was admitted plentifully day and night. The plants were shaded from about 11 o'clock till between 2 and 3 in the afternoon with thin mats.

*Monday, July 8, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	76	93	63	N. E.	Clear, and nearly calm.
8	84	94	69	N. E.	Light flying foggy clouds.
10	92	94	80	N. E.	Sunshine, and a brisk gale
12	105	96	82	N. E.	Ditto. [of wind.
2	102	98	80	N. E.	Ditto.
4	95	98	80	N. E.	Ditto.
6	82	97	74	N. E.	Ditto.
9	—	—	62	N. E.	Clear, and a brisk gale of wind.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given all day plentifully, but the lights were shut down in the evening for the night. To-day the water in the springs lowered the thermometer to 50.

*Tuesday*



*Tuesday, July 9, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	77	92	60	E. Thick foggy clouds, and a brisk gale of wind.
8	84	93	70	E. Sunshine, windy.
9	70	73	72	E. Ditto.
10	82	84	74	E. Ditto.
12	95	87	76	E. Ditto.
2	92	90	75	E. Ditto.
4	90	91	73	E. Ditto.
5	82	91	72	E. Ditto.
9	—	—	61	E. Clear, and a brisk wind.

Between 8 and 9 o'clock in the morning the plants were well watered with water 67 degrees warm. It was poured all over their leaves out of wide rosed water-pots; to each three-light frame was given about a hoghead. Air was given all day, till 5 o'clock in the afternoon, when the lights were shut down for the night.

*Wednesday, July 10, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

5	74	91	57	E. Foggy, and nearly calm.
6	77	91	62	E. The fog becomes thin.
8	84	92	71	E. Sunshine.
10	96	93	80	E. Ditto.
12	94	94	84	E. Ditto.
2	94	95	85	E. Ditto.
5	93	95	79	E. Ditto.
9	—	—	62	E. Clouds here and there.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given all day plentifully, and some left all night at every light.

Q 3

*Thursday,*

*Thursday, July 11, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	77	93	65	N. E.	Cloudy in the south and west, and clear in the north and east.
8	84	93	72	N. E.	Clouds here and there.
10	94	94	80	N. E.	Sunshine, and a gentle breeze of wind.
12	100	95	82	E.	Ditto.
2	95	96	81	E.	Ditto.
5	90	96	77	E.	Clouds here and there.
7	86	95	74	E.	Ditto.
9	—	—	67	E.	Clear, and nearly calm.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted till between 5 and 6 in the afternoon, when the plants were gently watered all over their leaves with water 77 degrees warm, and then the lights were shut close down.

*Friday, July 12, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	77	92	62	N. E.	Clear, and a gentle air of wind.
8	89	93	72	N. E.	Sunshine, and a brisk gale
10	95	94	80	N. E.	Ditto. [of wind.
12	92	96	85	N. E.	Ditto.
2	90	96	84	N. E.	Ditto.
4	91	96	81	N. E.	Ditto.
5	85	96	78	N. E.	Ditto.
7	78	95	72	N. E.	Ditto.
9	—	—	64	N. E.	Clear and calm.

In the morning the plants were stopped, their leaves



leaves thinned, and the fruit in blossom set. The plants were shaded with thin mats from between 11 and 12 o'clock till about half past 2 in the afternoon. Air was admitted day and night plentifully.

*Saturday, July 13, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

5	66	90	55	E. Calm, and not a cloud to be seen.
6	67	90	57	E. Bright sunshine.
8	80	91	68	E. Sunshine, and a brisk gale of [wind.
10	84	92	80	E. Ditto.
12	87	93	82	E. Ditto.
2	88	94	81	E. Ditto.
4	90	95	79	E. Ditto.
8	72	94	65	E. Clear and calm.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. About 7 o'clock in the morning I poured water 68 degrees warm, against the sides of the frames all round about, to moisten and sweeten the flues. Air was admitted plentifully all day, and continued all night. The plants were shaded with thin mats, from about 12 o'clock till 2 in the afternoon. To-day we gathered ripe gooseberries for the first time this summer.

*Sunday, July 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	61	89	53	N. E. Bright sunshine, nearly calm. [wind.
8	76	89	65	N. E. Sunshine, and a brisk
10	90	90	74	N. E. Ditto.
12	95	91	82	N. E. Bright sunshine.
1	96	91	81	N. E. Ditto.
3	94	93	80	N. E. Ditto.
5	90	94	78	E. Ditto.
9	—	—	60	E.

The plants were shaded with thin mats from about noon till between 2 and 3 o'clock in the afternoon. Air was continued night and day.

*Monday, July 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	62	88	55	E. Clear and calm.
8	80	89	68	E. Bright sunshine.
10	85	90	77	E. Ditto.
12	98	92	82	E. Light high clouds here and [there.
2	94	93	81	E. Ditto.
4	90	93	82	E. Sunshine.
9	—	—	61	E. Clear and calm.

The plants were gone over in the morning and stopped, their leaves thinned, and the fruit in blossom set. Air was given plentifully all day, and continued all night.

*Tuesday,*



*Tuesday, July 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
5	63	88	53	S. E. Clear and calm.
8	87	90	73	S. Sunshine, nearly calm.
10	89	91	81	S.W. Ditto.
12	85	91	87	S.W. Thin high clouds, and a brisk gale of wind.
2	86	91	90	S.W. Sunshine.
4	85	91	87	S.W. Ditto.
7	82	92	78	S.W. Thin streaky clouds.
9	—	—	72	S. Clouds in the horizon.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Between 8 and 9 o'clock in the morning I gave the plants a gentle watering with water about 65 degrees warm; it was given all over their leaves, but most was poured on above the flues. The plants were shaded with thin mats from about 11 o'clock till between 2 and 3 in the afternoon. Air was admitted all day plentifully, and some left all night. To-day we gathered raspberries and currants for the first time this season.

*Wednesday, July 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	66	88	59	S.W. Clear, and a brisk wind.
8	78	88	68	S.W. Light flying clouds.
10	76	88	72	S.W. The air is overcast.
12	81	89	78	S.W. The sun glimmers.
2	87	90	80	S.W. Flying light clouds.
4	88	91	78	S.W. Ditto.
7	78	91	71	S.W. Clouds in the horizon; nearly calm.
9	—	—	65	S.W. The moon appears faintly.

In the morning the plants were gone over and stopped,  
their

their leaves thinned, and the fruit in blossom set. Plenty of air was continued day and night.

*Thursday, July 18, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	70	88	60	S.W.	Cloudy; there had been a shower of rain in the night.
8	75	88	64	S.W.	Gloomy.
12	79	87	72	S.W.	Cloudy; it looks rainy.
2	74	87	65	W.	A drizzling rain.
4	73	87	64	W.	It has rained gently since 2 o'clock.
6	71	87	62	W.	Fair, cloudy.
9	—	—	56	W.	Clear, and a brisk wind.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Between 9 and 10 o'clock in the morning the plants were gently watered all over their leaves with water about 65 degrees warm. Air was continued all day, and a little left all night.

*Friday, July 19, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	70	84	57	W.	A heavy shower of rain.
8	71	84	58	W.	Cloudy, and a brisk wind.
10	74	81	65	W.	Ditto.
12	91	82	68	W.	The sun glimmers.
2	90	83	72	S.W.	Scattered clouds.
4	87	85	70	S.W.	Ditto.
6	82	85	68	S.W.	Ditto.
9	—	—	55	S.W.	Clouds here and there.

In the morning the plants were stopped, their leaves



leaves thinned, and the fruit in blossom set. Between 8 and 9 o'clock in the morning the plants were well watered with water 63 degrees warm; it was poured on all over their leaves and surface of the bed, but most was let fall above the flues. But little air was admitted in the day-time, and about half past 5 in the afternoon the lights were shut close down, and covered up with double mats for the night.

*Saturday, July 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	85	52	W. Cloudy, and a brisk wind.
9	75	86	59	W. Ditto.
10	82	87	63	W. Scattered great clouds.
12	79	87	59	N.W. Light showers.
2	84	88	63	N.W. Showery clouds.
4	82	88	56	N.W. Gentle showers.
6	—	—	57	N.W. Showery clouds; nearly calm.
9	—	—	52	N.W. Clear, and calm.

The frames were uncovered about 6 o'clock in the morning, and covered up just before 6 in the afternoon with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted about 8 o'clock in the morning, and continued till about 5 in the afternoon, when the lights were shut down for the night.

*Sunday,*



Sunday, July 21, 1793.

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	74	86	50	W. Sunshine, calm.
8	80	86	55	N.W. Clouds here and there.
10	94	88	62	N.W. Scattered smoky-like [clouds.
12	88	89	65	N.W. Ditto.
2	92	90	67	N.W. Ditto.
5	81	90	66	N.W. Cloudy, and nearly calm.
9	—	—	56	N.W. Ditto.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double mats. Air was given at 8 o'clock in the morning, and taken away about 5 in the afternoon.

Monday, July 22, 1793.

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	79	89	54	S.W. Cloudy, and a brisk wind.
8	81	89	60	S.W. Ditto.
10	78	86	68	S.W. Ditto.
12	85	88	73	S.W. The sun glimmers.
2	82	89	73	S.W. Ditto.
4	82	89	71	S.W. Light clouds, and a brisk wind.
9	—	—	59	S.W. Cloudy, nearly calm.

The frames were uncovered at 6 o'clock in the morning, and covered up about 6 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Between 8 and 9 o'clock in the morning I gave to each three-light frame about half a hoghead of water, which was 60 degrees warm, and I poured it all over the leaves of the plants, and on every part of the insides of the frames. Air was given at 8 o'clock

o'clock in the morning, and taken away at 4 in the afternoon.

Tuesday, July 23, 1793.

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	78	89	60	S. Thick foggy clouds come from the south.
8	82	89	66	S. Light showers.
10	83	89	68	S. Gloomy.
12	84	90	71	S.W. Ditto.
2	83	90	68	S.W. Cloudy, and nearly calm.
4	80	90	68	S.W. Ditto.
9	—	—	62	S.W. Ditto.

The frames were uncovered at 6 o'clock in the morning, and covered up in the evening with single mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted in the morning, and continued day and night.

Wednesday, July 24, 1793.

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	78	90	61	S.W. Thick foggy clouds come from the south-west.
8	80	90	68	S.W. Scattered light large [clouds.
10	88	91	73	S.W. Ditto.
12	95	92	79	S.W. Ditto.
1	96	92	80	S.W. Ditto.
2	99	94	78	W. Cloudy, and nearly calm.
4	94	94	78	W. Ditto.
7	—	—	71	S. Ditto.
9	—	—	67	S. Clear and calm.

The frames were uncovered at 6 o'clock in the morning,



morning, and covered up in the evening with mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued all day, and a finger-breadth left all night at every light.

*Thursday, July 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	77	91	63	S.W. Cloudy, and a brisk wind.
8	80	91	68	S.W. Ditto.
10	86	91	72	S.W. Cloudy, and near calm.
12	85	91	78	W. Gloomy.
2	83	87	76	W. The sun glimmers.
4	83	88	78	S.W. Sunshine.
6	80	89	74	S.W. Clouds here and there.
9	—	—	63	S.W. Clear and calm.

The frames were uncovered at 6 o'clock in the morning, and then the plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. Between 12 and 1 o'clock the plants were watered all over their leaves with water about 70 degrees warm. Air was given day and night plentifully.

*Friday, July 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	68	86	60	S.W. Speckled thin clouds.
8	76	86	70	S.W. Clouds here and there.
10	82	87	73	S.W. The sun shines faintly.
12	85	88	77	S.W. Scattered clouds.
1	85	89	79	S.W. Ditto.
2	83	89	78	S.W. Ditto.
4	79	89	75	S.W. Cloudy, and nearly calm.

In the morning the plants were stopped, their leaves thinned,

thinned, and the fruit in blossom set. Air was given plentifully day and night. To-day I began to cut cucumbers from plants which were raised in the spring in a hot-bed, and planted out on a ridge of warm dung under hand-lights. The plants are remarkably strong and healthy, and have the appearance of producing a plentiful crop. The water in the springs lowered the thermometer to-day to 52. This morning we began to reap rye, and also pease.

*Saturday, July 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	76	86	62	E.	Foggy, and a brisk air of
8	73	86	62	S. E.	It begins to rain. [wind.
10	67	85	61	S. E.	It continues to rain.
12	66	84	71	S. E.	It rains gently.
2	70	84	60	S. E.	It rains heavily.
4	72	84	60	S. E.	Ditto.
6	68	85	58	S. E.	Ditto.
8	65	85	54	N. E.	It rains a little.

Between 8 and 9 o'clock in the morning the lights were taken off the plants to let the rain fall on them, and at 1 o'clock they were put on again, and a little air admitted till 8 o'clock in the evening, when the lights were shut down for the night.

*Sunday,*



*Sunday, July 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	68	83	52	N. E. Gloomy, and a few drops of rain fall.
8	74	84	57	N. E. Light showers.
10	77	84	57	N. E. Ditto.
12	79	85	63	N. E. Cloudy, and a brisk wind.
4	74	85	59	N. E. Ditto.
8	—	—	55	N. Ditto.

Air was admitted at 8 o'clock in the morning, and continued day and night.

*Monday, July 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	63	83	50	N.W. Cloudy, and a brisk wind.
8	69	83	54	N.W. Cloudy, and nearly calm.
10	73	83	57	N.W. Ditto.
12	81	84	63	N.W. Ditto.
2	82	85	64	W. Sunshine.
3	85	85	66	W. Scattered clouds.
5	70	85	63	W. Sunshine.
9	—	—	52	W. Clear and calm.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Tuesday,*

*Tuesday, July 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	61	82	51	S. Clear, and nearly calm.
8	70	82	57	S.W. Sunshine.
10	77	82	65	S.W. Scattered clouds.
12	84	84	70	S.W. Ditto.
2	80	84	69	S.W. Great clouds, and a brisk gale of wind.
4	79	84	70	S.W. Scattered clouds.
7	69	84	63	S.W. Ditto.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Wednesday, July 31, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	67	82	57	S.W. Cloudy; there had been rain in the night.
8	70	82	70	S.W. Showers of rain.
10	80	82	70	S.W. The sun glimmers.
12	82	83	66	S.W. Showery.
1	84	84	73	S.W. Light clouds.
2	87	85	72	S.W. Scattered clouds.
4	86	86	69	S.W. Cloudy.
5	84	86	68	S.W. Light clouds.
8	—	—	59	S.W. Clear, and nearly calm.

In the morning the plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. The linings were raised with fresh dung rather higher than the surface of the mould in the frames. Air was given plentifully till 5 o'clock in the afternoon, when the lights were shut close down, and covered up with mats for the night.

R

*Thursday,*



*Thursday, August 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	71	85	52	S.W.	Bright sunshine, nearly
8	80	85	59	S.W.	Ditto. [calm.
10	85	86	66	S.W.	Scattered small clouds.
12	88	87	73	W.	Ditto.
2	88	88	73	W.	Ditto.
4	86	88	72	W.	Ditto.
6	79	87	68	W.	Sunshine. [wind.
8	74	86	61	W.	Thin clouds, and a brisk

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted at 8 o'clock in the morning, and continued till 8 o'clock in the evening, when the lights were shut down for the night. The frames were uncovered about 6 in the morning, and covered up about 6 in the evening with double mats.

*Friday, August 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	68	85	62	S.W.	Clear, and a brisk wind.
8	84	86	85	S.W.	Sunshine.
10	86	87	71	S.W.	Scattered clouds.
12	87	87	76	S.W.	Ditto.
2	96	88	75	S.W.	Sunshine.
3	92	88	77	S. E.	Ditto.
4	85	88	74	S. E.	Ditto.
6	79	88	70	E.	Ditto.
8	—	—	62	E.	Thin clouds.

The frames were uncovered about 6 o'clock in the morning, and covered up about 6 in the evening with

with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given about 8 o'clock in the morning, and taken away about 6 o'clock in the afternoon.

*Saturday, August 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	86	59	E. Clouds here and there.
8	87	88	67	S. E. Scattered clouds.
10	87	88	77	S. E. Ditto.
12	85	88	78	S. E. Ditto.
1	82	89	79	S. E. Sunshine.
2	81	89	78	S. E. Thin clouds.
4	82	89	77	S. E. Ditto.
6	76	82	74	S. E. Cloudy, and nearly calm.
8	—	—	69	S. Great thundry confused-like clouds arise from every quarter.
9	—	—	66	S. It rains and thunders, and great flashes of lightning appear.

The frames were uncovered about 7 o'clock in the morning, and covered up just before 6 in the afternoon with double mats. The plants were gone over and stopped, their leaves thinned, and the fruit in blossom set. Air was admitted at 8 o'clock in the morning, and continued till between 3 and 6 in the afternoon, when I gave the plants a plentiful watering with water 75 degrees warm, and then shut the lights down for the night.



*Sunday, August 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	78	87	60	S.W. Thin clouds, and a brisk gale of wine.
8	82	87	66	S.W. Flying clouds, windy.
10	81	88	70	S.W. The sun glimmers.
12	83	88	71	S.W. Ditto.
1	79	88	70	S.W. Cloudy.
3	79	88	70	S.W. Ditto.
5	78	88	64	S.W. It rains gently.
8	—	—	59	S.W. Gloomy.

The frames were uncovered at 7 o'clock in the morning, and covered up between 5 and 6 in the afternoon with double mats. Air was given about 8 o'clock in the morning, and taken away about 5 in the afternoon.

*Monday, August 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	76	87	57	S.W. A thick fog, nearly calm.
8	77	87	62	S.W. Foggy clouds.
10	82	88	67	S.W. Scattered clouds.
12	87	88	72	S.W. Sunshine.
2	89	90	73	S.W. Ditto.
4	90	90	70	S.W. Flying light clouds.
5	84	90	65	S.W. Showers of rain, and gusts of wind.
8	—	—	55	S.W. Clear and calm.

The frames were uncovered about 6 o'clock in the morning, and covered up at 6 in the evening with single mats. In the morning the plants were stopped, their

their leaves thinned, and the fruit in blossom set. Air was given a little before 8 o'clock in the morning, and continued day and night,

*Tuesday, August 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	87	55	W. Clear, and a brisk wind.
8	84	87	59	W. Sunshine.
10	85	88	64	W. Scattered light clouds.
12	89	90	68	W. Sunshine.
2	87	90	72	W. Scattered small clouds.
4	89	90	72	W. Ditto.
5	82	90	68	W. Ditto.
8	—	—	60	W. Clear and calm.

The frames were uncovered at 6 o'clock in the morning, and covered up between 5 and 6 in the evening with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued till about 7 o'clock in the evening, when the lights were shut close down for the night. The dung of the linings having become rather dry and husky, I had them well watered. To-day the water in the springs lowered the thermometer to 54 degrees.



*Wednesday, August 7, 1793.*

Hours.	S.	Th.	P.	Th.	Ther.	Wind.
6	75	89	52	S.W.	Clear; there is a great	
8	83	88	60	S.W.	Sunshine.	[dew.
10	85	89	67	S.E.	Ditto.	
12	88	90	74	S.E.	The sun glimmers through light clouds.	
2	83	90	71	S.E.	Cloudy; it looks rainy.	
4	80	90	62	S.E.	It rains and thunders.	
4 $\frac{1}{2}$	80	90	58	N.E.	A heavy shower of hail and rain.	
6	76	90	58	N.	Gloomy. Great thick clouds come from the west, and others come from the east, and mix with them; and quickly the wind turns to the west, and then a large black cloud goes over to the east, and it becomes so dark for about a quarter of an hour, that a clear-sighted person can scarcely see to read.	
7	—	—	57	W.	It has rained and thundered since 6 o'clock, with strong gusts of wind accompanying.	
8	—	—	56	N.E.	Clear, except some clouds in the horizon.	

In the morning the top of the linings was broken up about a foot deep, and well shaken, and then some fresh dung laid on the top of them, and after that plenty of water was poured upon them all round about. Air was given about 8 o'clock in the morning,

ing, and continued till 4 in the afternoon, when the lights were shut down for the night, and about 6 o'clock they were covered up with double mats. This morning we began to reap wheat, and to cut oats.

*Thursday, August 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	74	87	56	S.W. Cloudy, and some drops
8	78	87	60	S.W. Gloomy. [rain fall.
10	77	87	64	S.W. Small drifting rain.
11	79	88	66	S.W. Cloudy, and a brisk wind,
1	87	88	71	S.W. Scattered clouds, windy.
2	84	88	71	S.W. Ditto.
4	96	90	69	S.W. Ditto.
6	88	91	64	S.W. Ditto.
8	—	—	58	S.W. Clear, and a brisk gale of wind.

The frames were uncovered at 6 o'clock in the morning, and covered a little before 6 in the afternoon with mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. About 11 o'clock water about 65 degrees warm was poured all round against the sides of the frames, and on the mould above the flues. Air was given between 8 and 9 o'clock in the morning, and taken away between 3 and 4 in the afternoon.



*Friday, August 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	88	57	S.W. Flying clouds, windy.
8	80	88	62	S.W. Ditto.
10	73	83	65	S.W. Cloudy, windy.
12	80	85	69	S.W. Scattered clouds, windy.
1	90	86	70	S.W. Ditto.
2	82	87	68	S.W. Ditto.
4	85	88	67	S.W. Ditto.
7	—	—	62	S.W. Ditto.
8	—	—	58	S.W. Clear, and a brisk gale of wind.

The frames were uncovered at 6 o'clock in the morning, and covered up in the evening with double mats. Between 8 and 9 o'clock in the morning the plants were well watered all over their leaves with water 64 degrees warm. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given in the morning, and continued day and night.

*Saturday, August 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	77	86	61	S.W. Windy; there had been rain in the night, and a little falls this morning.
8	82	87	64	S.W. Thin flying clouds, windy.
10	80	87	67	S.W. Ditto.
12	86	88	71	S.W. Ditto.
2	85	89	70	S.W. Scattered clouds, windy.
4	84	89	72	S.W. Ditto.
5	81	89	69	S.W. Ditto.
8	—	—	57	S.W. Clouds here and there.

The frames were uncovered about 6 o'clock in the morning,

morning, and covered up just before 6 in the evening with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Sunday, August 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	68	85	53	S.W. Clear, and a brisk wind.
8	72	85	59	S.W. Thin streaky clouds.
11	84	86	64	S.W. Scattered thin clouds.
1	80	87	69	S.W. Ditto.
3	80	87	69	S.W. The sky is mottled.
5	82	87	67	S.W. Ditto.
8	—	—	60	S.W. Clouds in the horizon.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Monday, August 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	76	87	56	S.W. Thin clouds, and nearly
8	70	86	60	S.W. Ditto. [calm.]
10	80	87	67	S.W. Sunshine.
12	92	90	71	S.W. Ditto.
1	98	90	70	S.W. Ditto.
2	90	91	73	S.W. Ditto.
4	88	91	73	S.W. Clouds here and there.
9	—	—	58	S.W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued



continued day and night. To-day we began to cut barley, which was sown in March.

*Tuesday, August 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	74	87	59	S. E.	Thin streaky high clouds, and a brisk wind.
8	78	88	68	S. E.	The sun shines faintly.
10	84	89	74	S.	Clouds here and there.
11	86	90	78	S.	Ditto.
12	85	90	76	S. W.	Ditto.
2	84	90	79	S. W.	Thundry-like clouds.
4	80	90	72	S. W.	The sky is overcast.
5	76	90	68	S. W.	A light shower.
8	—	—	64	S. W.	Beautiful red sky in the west.

In the morning the plants were stopped, their leaves thinned, the weeds picked out, and the fruit in blossom set. The covering was taken off about 6 o'clock in the morning, and put on a little before 6 in the afternoon. Air was continued all day, and in the evening the lights were shut down for the night.

*Wednesday, August 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	70	88	51	S. W.	Clear, and a brisk wind.
8	80	88	58	S. W.	Scattered clouds.
10	82	89	67	S. W.	Ditto.
12	84	89	70	S. W.	Ditto.
2	85	89	72	S. W.	Clouds here and there.
4	78	89	68	S. W.	Ditto.
6	70	88	60	S. W.	Sunshine.
8	—	—	56	S. W.	The sky is overcast.

The frames were uncovered in the morning about 6 o'clock.

6 o'clock, and covered up in the evening with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given till 5 o'clock in the afternoon, when the lights were shut close down for the night.

*Thursday, August 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	76	87	56	S. Gloomy, calm ; it looks rainy in the south-west.
8	73	87	67	S. A light shower of rain.
10	80	87	67	S. Sunshine.
12	82	87	69	S.W. Showery.
2	80	87	68	S.W. Flying clouds, windy.
4	79	87	68	S.W. Ditto.
5	78	87	64	S.W. Ditto.
8	—	—	57	S.W. Cloudy and windy.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double mats. Air was given about 9 o'clock in the morning, and the lights were shut close down in the evening for the night.

*Friday, August 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	73	87	53	W. Flying clouds ; windy.
8	76	87	60	W. Ditto.
10	77	87	62	W. Ditto.
12	80	87	65	S.W. Ditto.
2	84	88	64	W. The sun glimpses.
4	88	88	63	W. Ditto.
6	75	87	60	S.W. Sunshine.
8	—	—	55	S.W. Clear, and a brisk wind.

The frames were uncovered at 6 o'clock in the morning,



morning, and covered up about half past 5 in the afternoon with double mats. Air was admitted at 8 o'clock in the morning, and continued till about 5 in the afternoon, when the lights were shut close down for the night.

*Saturday, August 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	72	85	53	S. E.	There had been rain in the night, and it rains this morning.
8	73	85	54	S. E.	Rainy and windy.
10	76	85	55	S. E.	It rains heavily.
12	82	86	54	S.W.	Showery and windy.
2	83	87	64	S.W.	Ditto.
4	80	87	60	S W.	Ditto.
6	—	—	57	S.W.	A strong gale of wind;
8	—	—	55	S.	Ditto. [gloomy,

The frames were uncovered about 6 o'clock in the morning, and covered up about 5 in the evening with double mats. The plants were gone over, their leaves thinned, the shoots stopped, and the fruit in blossom set. But little air was given in the day-time, and at 4 in the afternoon the lights were shut close down for the night. In the afternoon a layer of fresh dung was laid upon the north-side lining.

*Sunday,*

*Sunday, August 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	85	50	N.W. Cloudy, and a high wind.
8	71	85	52	N.W. Ditto.
10	80	85	57	N.W. Cloudy, windy.
1	80	86	60	N.W. The wind is fallen.
3	80	86	63	N.W. The sun glimmers.
5	78	86	59	W. Cloudy, calm.
10	—	—	53	W. Thin clouds; some drops of rain fall.

The frames were uncovered about 6 o'clock in the morning, and covered between 5 and 6 in the evening with double mats. Air was given in the day-time, but the lights were shut down all night.

*Monday, August 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	85	48	S.W. Thin clouds, nearly calm.
8	76	85	57	S.W. The sun shines.
10	86	85	62	W. Clouds here and there.
12	95	87	69	W. Sunshine.
1	88	88	72	W. Ditto.
2	90	88	65	W. A light shower.
3	93	88	68	W. Scattered clouds.
6	86	88	63	S.W. Clouds here and there, nearly calm.
7	—	—	59	S.W. Showery clouds.

The frames were uncovered at 6 o'clock in the morning, and covered up at 6 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 8 in the morning, and taken away between 4 and 5 o'clock in the afternoon.

*Tuesday*



*Tuesday, August 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	85	44	S.W. Clear, and a great dew.
8	80	85	53	S.W. Sunshine.
10	82	85	58	S.W. Ditto.
12	92	86	65	S.W. Scattered little clouds.
1	90	87	67	W. The sun shines faintly.
2	84	87	67	W. Ditto.
4	82	87	67	W. Sunshine.
5	89	88	65	W. Ditto.
6	—	—	62	W. Thin clouds, nearly calm.
8	—	—	55	W. Clear and calm.

The frames were uncovered at 6 o'clock in the morning, and covered up about 6 in the afternoon with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. About 4 o'clock in the afternoon, water 68 degrees warm was poured all round against the insides of the frames, to moisten the mould upon the flues. Air was given about 8 o'clock in the morning, and taken away between 4 and 5 in the afternoon.

*Wednesday, August 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	74	86	56	S.W. Thin clouds, nearly calm.
8	74	86	58	S.W. Light foggy clouds.
10	82	86	65	S.W. Sunshine.
11	87	80	70	S.W. Ditto.
12	90	87	74	S.W. Scattered light clouds.
2	91	88	74	S.W. Sunshine.
3	93	88	73	S.W. Scattered clouds.
4	90	88	72	S.W. Mottled sky.
7	—	—	65	S.W. Thin clouds, nearly calm.
9	—	—	60	S.W. Clouds here and there; calm.

The frames were uncovered about 6 o'clock in

the

the morning, and covered up in the evening with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 8 o'clock in the morning, and taken away about 5 in the afternoon.

*Thursday, August 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	87	56	S.W. Thin clouds, and a brisk
8	77	87	62	S.W. Ditto. [gale of wind]
10	85	87	70	S.W. The sun shines faintly.
12	88	88	76	S.W. Ditto.
2	87	88	74	S.W. Ditto.
3	84	88	73	S.W. The sky is overcast.
6	80	88	64	S.W. Ditto.
10	—	—	57	S.W. Clear, and a brisk wind.

The frames were uncovered between 6 and 7 o'clock in the morning, and covered up in the evening with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted from 8 o'clock in the morning till about 5 in the afternoon. To-day the water in the springs lowered the thermometer to 54.

*Friday, August 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	86	60	S.W. Cloudy, and a brisk wind.
8	76	86	63	S.W. Ditto.
10	77	86	67	S.W. Ditto.
12	85	86	71	S.W. A light shower.
1	90	87	73	S.W. The sun shines faintly.
2	87	87	71	S.W. Sunshine.
4	84	87	70	W. Ditto.
6	—	—	64	N.W. Ditto.
8	—	—	56	N.W. Clear, and a brisk wind.

The frames were uncovered about 6 o'clock in the morning,



morning, and covered up in the evening with mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 8 o'clock in the morning, and continued day and night. To-day we made an end of harvest.

*Saturday, August 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	84	52	S.W. Clear, and a brisk air of
8	74	84	57	S.W. Ditto. [wind.
10	82	85	62	W. Scattered clouds.
1	85	86	69	W. Ditto.
2	87	86	68	W. Ditto.
4	84	86	66	W. The sky is overcast.
6	80	86	61	W. Cloudy, and a brisk wind.
8	—	—	54	W. Thin clouds, nearly calm.

The frames were uncovered at 6 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Sunday, August 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	68	83	46	W. Clear, and nearly calm.
8	76	83	52	W. Sunshine.
10	87	84	59	N.W. Scattered smoky - like
11	90	87	62	N.W. Ditto. [clouds.
1	87	87	69	N.W. Ditto.
2	90	87	68	N. Sunshine.
4	90	87	68	N. Clouds here and there.
5	87	87	65	N.E. Ditto.
9	—	—	50	S.E. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning. Air was continued day and night.

*Monday,*

*Monday, August 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	61	81	44	S. E. Clear, and nearly calm.
8	76	83	55	S. E. Sunshine.
10	81	83	63	S. E. Ditto.
12	87	84	74	S. Thin clouds, and a brisk wind.
3	88	85	71	S. The sun shines faintly.
4	95	86	69	S.W. Ditto.
6	86	87	63	S.W. Cloudy, and nearly calm.
9	—	—	56	S.W. Cloudy, dark.

In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued till between 3 and 4 o'clock in the afternoon, when the lights were shut close down for the night, and at 6 o'clock the frames were covered up with double mats.

The cucumber plants in the open ground are infected with the canker.

*Tuesday, August 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	83	48	W. Clear, and a brisk wind.
8	78	83	55	W. Clouds here and there.
10	82	84	64	W. Flying clouds, and a brisk
12	84	85	67	W. Ditto. [wind.
2	80	85	68	W. Ditto.
4	81	85	65	W. Sunshine.
6	80	85	56	W. Clouds here and there.
9	—	—	50	W. Clear, and nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double

S

mats.



mats. Air was given about 8 o'clock in the morning, and continued till between 4 and 5 in the afternoon. The linings were raised all round with warm dung.

*Wednesday, August 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	71	82	53	S.W. Cloudy, and but little
8	76	82	62	S.W. Thin clouds. [wind.
10	82	83	68	S.W. Cloudy, and a brisk wind.
12	67	77	69	S.W. Ditto.
1	86	77	73	S.W. The sun shines faintly.
2	82	78	69	S.W. Cloudy, and a brisk wind.
4	83	79	67	S.W. A very light shower.
8	—	—	57	S.W. Cloudy, and nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up between 5 and 6 in the afternoon with double mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. About 11 o'clock to the plants of each three-light frame was given nearly a hoghead of water, about 62 degrees warm; it was poured all over their leaves in imitation of a heavy shower of rain. After the watering but little or no air was admitted, and at 4 o'clock in the afternoon the lights were shut close down for the night.

*Thursday,*

*Thursday, August 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	81	56	S.W. A thick fog, nearly calm.
8	80	82	57	N.W. Bright sunshine.
10	86	83	64	N.W. Ditto.
12	90	84	66	W. Scattered light clouds.
3	87	85	70	W. Ditto.
4	85	85	68	W. Ditto.
6	80	85	63	W. Clouds here and there.
8	—	—	54	W. Clear, calm.

The frames were uncovered about half past 6 o'clock in the morning, and covered up in the evening with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given from 8 o'clock in the morning till about 4 in the afternoon.

*Friday, August 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	77	84	54	S.W. It rains gently.
8	80	84	59	S.W. Flying light clouds.
10	83	85	65	S.W. Showery clouds.
12	80	85	68	S.W. Light showers.
1	88	85	69	S.W. Great thundery clouds.
2	84	86	68	S.W. Squally showers.
4	80	86	63	S.W. Cloudy, windy.
8	—	—	54	S.W. Clear in the east.

The frames were uncovered at 6 o'clock in the morning, and covered up in the evening with mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set.

S a

Air



Air was given from about 8 o'clock in the morning till between 4 and 5 in the afternoon.

*Saturday, August 31, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	85	54	S.W. Gloomy, and a brisk gale of wind.
8	77	85	59	S.W. Showery light clouds.
10	80	85	65	S.W. Cloudy, windy.
12	78	85	63	S.W. Showery.
2	81	85	62	S.W. Sunshine, windy.
4	80	85	60	S.W. Light showers, and gusts of wind.
5	77	85	57	S.W. A heavy shower for a few minutes.
7	—	—	55	W. Clear, and a brisk gale of
9	—	—	50	W. Ditto. [wind.

The frames were uncovered at 6 o'clock in the morning, and covered up in the evening with mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given from about 9 o'clock in the morning till between 4 and 5 in the afternoon.

*Sunday,*

*Sunday, September 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	S.W. Gloomy ; it looks rainy.
8	73	84	52	S.W. It rains gently.
10	75	84	57	S.W. Ditto.
12	74	84	60	S.W. Ditto.
2	72	84	58	S.W. It continues to rain.
4	73	84	60	S.W. Windy, and a small rain.
9	—	—	55	S.W. Cloudy, windy, dark.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. But little air was admitted in the day-time, and none all night.

*Monday, September 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	74	83	52	S.W. Clear, and a brisk gale of wind.
8	75	83	59	S.W. The clouds look rainy.
10	83	84	65	S.W. Showery and windy.
12	78	84	66	S.W. Ditto.
2	80	84	67	S.W. Flying clouds, windy.
4	76	84	62	S.W. Ditto.
6	74	84	58	S.W. Squally showers.
9	—	—	50	S.W. Clear and windy.

The frames were uncovered about 6 o'clock in the morning, and covered up about 6 in the afternoon with mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given from between 8 and 9 o'clock till about 5 in the afternoon.



*Tuesday, September 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	83	52	S.W. Clear, and a strong gale of wind.
8	75	83	58	S.W. Flying clouds, windy.
10	74	83	61	W. Ditto.
12	80	84	64	W. Light showers.
2	78	84	63	W. Scattered clouds.
4	76	84	60	W. Ditto.
6	79	84	57	W. Clouds here and there.
9	—	—	48	W. Clear, and calm.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given about 8 o'clock in the morning, and continued all day, and a little left at each light all night.

*Wednesday, September 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	69	82	41	W. Clear, and nearly calm.
8	73	82	48	W. Sunshine, and a brisk gale
10	80	83	52	W. Ditto. [of wind,
12	81	83	62	W. Scattered clouds.
2	82	83	61	W. Showery clouds.
4	81	84	54	W. A heavy shower for about 10 minutes.
7	—	—	49	W. Clouds here and there.
9	—	—	45	W. Clear, calm.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Thursday,*

*Thursday, September 5, 1793.*

Hours,	S.Th.	P.Th.	Ther.	Wind.
6	70	81	38	W. Clear, and nearly calm.
8	73	81	45	W. Sunshine.
10	86	82	46	W. Ditto,
11	78	83	49	W. Calm; the sun is covered with a light cloud, through which we clearly see the eclipse of him: To appearance three fourth parts of him are darkened,
12	77	83	50	W. Clear, and nearly calm.
2	85	84	60	W. Cloudy.
4	82	85	58	W. Ditto.
6	—	—	52	W. Ditto,
9	—	—	45	W. Cloudy, and nearly calm.

The frames were uncovered at 6 o'clock in the morning, and covered in the evening with mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set.

*Friday, September 6, 1793.*

Hours,	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. Cloudy, and nearly calm.
8	72	82	48	S.W. Ditto.
10	79	82	57	S.W. The sun shines faintly.
12	86	84	59	S.W. Ditto,
2	83	84	57	W. Great thundery clouds.
4	78	84	52	W. It rains and thunders.
7	—	—	45	N. Showery, nearly calm,
10	—	—	41	N. Clear, calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.



To-day I had the south side lining taken away, and a lining of fresh dung applied in its stead. The dung of the old lining was rotten and black, and but little heat in it, only a gentle warmth derived from the lining of the opposite side.

*Saturday, September 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	33	S.W.	Clear, calm, and a white [frost.
8	70	78	38	S.W.	Sunshine.
10	76	79	48	S.W.	Bright sunshine.
11	86	81	51	S.W.	Ditto.
12	87	82	54	W.	Ditto.
2	85	82	56	W.	Ditto.
3	90	83	56	W.	Ditto.
5	84	84	55	W.	Ditto.
9	—	—	48	W.	Clear, and nearly calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. The lining that was made up yesterday, being sunk, was raised with new dung. Air was continued day and night.

*Sunday,*

*Sunday, September 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	S.W. Foggy clouds.
8	73	80	58	S.W. Light clouds.
10	76	81	65	S.W. Showery-like clouds.
12	80	81	68	S.W. The sun shines faintly.
2	82	82	70	W. Ditto.
4	82	83	67	W. Thin clouds cover the sky.
9	—	—	55	W. Clear and calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was continued day and night.

*Monday, September 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	72	82	53	S.W. Cloudy, and but little
8	74	83	57	S.W. Thin clouds. [wind.
10	75	83	63	S.W. Lowery.
12	84	84	67	S.W. The sun shines faintly.
2	82	84	65	S.W. Clouds here and there.
5	80	85	63	W. Ditto.
9	—	—	54	W. Ditto.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night. To-day the water in the springs lowered the thermometer to 54.



*Tuesday, September 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	52	W. Clear, and nearly calm,
7	70	84	55	W. Ditto.
10	80	84	65	W. The sun shines faintly.
12	78	84	68	W. The sky is overcast.
2	82	85	67	W. Cloudy, and nearly calm,
5	80	86	66	W. Sunshine.
6	—	—	63	N. Clouds here and there.
9	—	—	57	N. Clear, calm.

The frames were uncovered about 7 o'clock in the morning, and covered up between 5 and 6 in the afternoon with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night. The south side lining, being sunk, was raised with hot dung, and then about a hoghead of water was poured on it.

About 3 o'clock in the afternoon water was poured all round the sides of the frames, and above the flues where the mould appeared dry.

*Wednesday, September 11, 1793..*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	71	85	48	S.W. Foggy, nearly calm,
8	75	85	55	N.W. Light foggy clouds.
10	86	86	61	N.W. Sunshine.
12	83	87	67	N.W. Flying light clouds,
3	84	87	62	N.W. Sunshine.
6	81	87	57	N. Clear, calm.
9	—	—	50	N. Ditto.

The frames were uncovered about 6 o'clock in the morning,

morning, and covered up in the evening with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given plentifully in the day-time, and some at every light all night. To-day a great heat is arisen in the south side lining.

*Thursday, September 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	46	N.	A thick fog.
7	76	87	49	N.	The fog begins to scatter.
8	81	87	53	N.E.	The sun shines faintly.
10	88	88	60	N.E.	Bright sunshine, nearly
12	92	89	66	S. E.	Ditto. [calm.
2	88	90	72	S. E.	Ditto.
4	83	90	69	S. E.	Clouds here and there.
6	—	—	64	S. E.	Ditto.
9	—	—	57	S. E.	Cloudy, calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. Air was given plentifully day and night.

*Friday, September 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	56	S.	Cloudy; there had been rain in the night.
7	75	88	57	S.	A heavy rain.
8	76	88	60	S. E.	It continues to rain.
10	83	88	64	S. E.	Fair, cloudy.
12	87	89	71	S.	Great towering white
2	80	89	70	S.	Showery. [clouds.
4	78	89	68	S.W.	Ditto.
6	75	88	63	S.W.	Cloudy, and a brisk wind.
9	—	—	54	S.W.	Cloudy.

The frames were uncovered about 7 o'clock in the morning,



morning, and covered up in the evening with double mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Saturday, September 14, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	56	S. Cloudy, and but little wind.
7	78	89	58	S. Ditto.
8	78	89	63	S. Ditto.
10	85	89	66	S. The sun glimmers.
1	90	90	69	S. Ditto.
3	80	90	67	S. Cloudy, and a brisk wind,
5	78	90	65	S. Cloudy, and nearly calm.
9	—	—	57	S. It rains fast.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with double mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Sunday, September 15, 1793.*

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	55	S.W. Cloudy; there had been rain in the night.
8	78	89	59	S.W. Cloudy, and a brisk wind.
10	84	89	68	S.W. Scattered great clouds.
11	86	90	69	S.W. Ditto.
1	83	90	65	S.W. Clouds here and there.
2	83	90	68	S.W. Large clouds with white
4	90	91	92	S.W. Sunshine. [edges.
9	—	—	55	S.W. Showers of rain.

The frames were uncovered about 7 o'clock in the morning,

morning, and covered up in the evening with double mats. Air was continued till about 3 o'clock in the afternoon, when the lights were shut close down for the night.

*Monday, September 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	75	88	50	S.W. Cloudy ; there had been rain in the night.
8	76	88	54	S.W. Sunshine.
10	78	88	58	S.W. Heavy showers.
12	77	88	59	S.W. Showery.
2	94	89	64	S.W. Sunshine.
4	83	89	60	S.W. Ditto.
7	—	—	51	S.W. Clear and calm.
9	—	—	48	S.W. Ditto.

The frames were uncovered about 6 o'clock in the morning, and covered up about 5 in the afternoon with double mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given about 8 o'clock in the morning, and continued day and night.

*Tuesday,*



*Tuesday, September 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. Clear, and nearly calm,
7	73	88	49	S.W. Sunshine.
9	76	88	54	S.W. Ditto.
10	80	88	59	S.W. Clouds here and there.
12	83	88	63	S.W. Cloudy.
2	78	88	62	S.W. Showery.
4	77	88	58	S.W. Ditto.
6	74	88	56	S. Ditto.
9	—	—	56	S. Windy, and a small rain.

The frames were uncovered about 7 o'clock in the morning, and covered in the evening with double mats. In the afternoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Wednesday, September 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	58	S. Gloomy; there had been rain in the night.
8	77	88	63	S.W. Cloudy, and a brisk wind,
10	79	88	65	S.W. A drifting rain.
12	80	88	69	S.W. Gloomy, nearly calm.
2	79	88	65	S.W. Light showers.
4	77	88	65	S.W. It rains fast.
5	74	88	59	N. The wind turns suddenly, and blows hard, and it rains heavily.
6	—	—	56	N. It continues to rain.
9	—	—	54	N. Fair, cloudy.

The frames were uncovered between 7 and 8 o'clock in the morning, and covered up about 5 in the

the afternoon with double mats. Air was continued day and night.

*Thursday, September 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	47	N. E. Clear, and a brisk wind.
7	75	88	48	N. E. The sky is overcast.
9	80	88	53	N. E. Thin clouds.
10	81	88	54	N. Cloudy, and a brisk wind.
12	75	88	55	N. Ditto.
2	76	88	54	N. Ditto.
4	77	88	53	N. Cloudy, and nearly calm.
6	74	88	50	N. Ditto.
9	—	—	47	N. Ditto.

The frames were uncovered at 7 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Friday, September 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	46	N. Cloudy, gloomy.
8	79	88	49	N. Ditto.
10	81	89	57	N. Light clouds.
12	82	90	56	N. E. A shower of rain.
2	90	90	57	N. E. Sunshine.
4	75	88	55	N. E. Cloudy, and a brisk wind.
6	76	88	51	N. E. Light clouds.
9	—	—	45	N. E. Clear, and a brisk wind.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three



three inches thick of hay and mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set.

About 4 o'clock in the afternoon I gave to each three-light frame of plants nearly half a hoghead of water, warmed to about 83 degrees. It was poured all over their leaves, and every part of the inside of the frames was well washed therewith. The lights were then shut close down for the night.

*Saturday, September 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	38	N. E. Showery; a rainbow in in the west.
7	78	89	41	N. E. Sunshine, and a brisk
9	82	89	48	N. E. Ditto. [wind.
10	81	89	52	N. E. Clouds here and there.
12	85	90	54	N. E. It rains.
2	88	91	53	N. E. Sunshine.
3	84	91	44	N. E. A shower of hail.
4	80	90	45	N. E. Showery.
6	75	89	43	N. E. Clouds here and there.
9	—	—	40	N. E. Ditto.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with hay and mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given about 8 o'clock in the morning, and continued day and night.

*Sunday,*

Sunday, September 22, 1793.

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	40	N. Cloudy; there had been rain in the night.
8	76	89	43	N. A small rain.
10	74	89	46	N. It rains.
12	75	89	46	N. Ditto.
2	74	88	46	N. It continues to rain fast.
4	72	88	45	N. Ditto.
6	68	88	43	N. Ditto.
9	—	—	40	N. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. But little air was given in the day-time, and in the evening the lights were shut close down for the night.

Monday, September 23, 1793.

Hours. S.Th. P.Th. Ther. Wind.

6	—	—	40	S.W. Cloudy, and but little [wind.]
8	76	87	43	S.W. Ditto.
10	79	87	48	S.W. Ditto.
12	77	88	50	S.W. Ditto.
2	76	88	50	S.W. Ditto.
3	75	88	48	S.W. A shower of rain.
5	74	88	48	S.W. The sun glimpses.
9	—	—	44	S.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up about 5 in the afternoon with about three inches thick of hay and mats. In the forenoon I stopped the plants, thinned their leaves, cut off several small fruit where they were too thick,

T

and



and set the fruit in blossom. Air was given about 9 o'clock in the morning, and taken away about 5 in the evening. The linings being sunk were raised with fresh dung.

*Tuesday, September 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	42	S.W. Cloudy, and a brisk air of
8	76	87	50	S.W. Ditto. [wind.
10	80	87	54	S.W. Sunshine.
12	85	88	56	S.W. The sun shines faintly.
1	84	88	59	S.W. Ditto.
2	82	88	58	S.W. Showery.
5	77	88	54	S.W. Gloomy.
9	—	—	50	S.W. It rains heavily.

The frames were uncovered a little before 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was admitted about 9 o'clock in the morning, and continued day and night.

*Wednesday, September 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	45	N.W. A thick fog.
8	74	88	48	N.W. The fog begins to scatter.
10	81	88	52	N.W. Sunshine.
12	95	90	58	N.W. Ditto.
1	100	91	60	N.W. Scattered clouds.
2	94	92	58	N.W. Ditto.
5	80	92	58	N.W. Ditto.
6	84	92	54	N.W. Ditto.
9	—	—	43	N.W. Clear, calm.

The frames were uncovered a little before 8 o'clock in

in the morning, and covered up in the evening with hay and mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Thursday, September 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	35	N. Clear and calm.
8	74	89	41	N. Sunshine.
10	85	89	51	N. Scattered clouds.
12	82	89	61	S. E. Ditto.
2	90	90	59	S. E. Bright sunshine.
4	85	91	56	S. E. Ditto.
9	—	—	43	S. E. Clear and calm.

The frames were uncovered about 8 o'clock in the morning, and covered up between 5 and 6 in the evening with hay and mats. In the forenoon I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was continued night and day.

*Friday, September 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	35	S.W. Foggy.
8	74	89	43	S.W. The fog becomes thin.
10	81	89	50	S. E. Sunshine.
12	86	90	57	S. E. Ditto.
2	90	91	57	S. E. Ditto.
4	83	91	55	S. E. Ditto.
6	—	—	49	E. Clear, and nearly calm.
9	—	—	43	E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered between 5 and 6 in the afternoon with hay and mats. In the forenoon the plants



were stopped, their leaves thinned, and the fruit in blossom set. About 11 o'clock, water 80 degrees warm was poured all round against the sides of the frames, and on the mould above the side flues. Air was continued day and night.

*Saturday, September 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	49	E. Foggy, nearly calm,
8	76	89	49	E. Ditto.
10	80	89	54	E. Sunshine,
12	85	90	58	E. Ditto.
2	86	91	59	E. Ditto.
4	78	91	55	E. Ditto.
6	—	—	49	E. Clear, and nearly calm.
9	—	—	43	E. Ditto,

The frames were uncovered about 8 o'clock in the morning, and covered up a little before 6 in the evening with hay and mats. Air was continued day and night.

*Sunday, September 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	42	E. Foggy.
8	78	89	50	E. The fog becomes thin.
10	87	89	58	S.E. The sun shines faintly.
11	84	89	62	S.E. Ditto.
1	80	90	64	S.E. Ditto.
2	82	90	60	S. Cloudy.
5	75	90	55	S. Gloomy, nearly calm.
9	—	—	46	S. Cloudy, dark.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was continued day and night.

*Monday,*

*Monday, September 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	47	S.W. Clear, and nearly calm.
8	75	90	50	S.W. Cloudy, and a brisk wind.
10	78	90	56	S.W. Ditto.
12	83	90	59	S.W. Scattered clouds.
2	76	90	57	S.W. Ditto.
4	72	90	54	S.W. Ditto.
9	—	—	46	S.W. Cloudy, dark.

The frames were uncovered about 8 o'clock in the morning, and covered in the evening with hay and mats. In the forenoon I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was continued day and night.

*Tuesday, October 1, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	47	S.W. Rainy morning.
8	73	88	57	S.W. Flying clouds, windy.
10	75	88	64	S.W. Ditto.
12	75	88	65	S.W. Showers of rain.
2	72	87	61	S.W. Ditto.
5	72	87	57	S.W. Clear, and a brisk wind.
9	—	—	52	S.W. Cloudy and windy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was continued day and night.



*Wednesday, October 2, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	45	S.W. Clear, and a brisk wind.
8	71	86	49	S.W. Sunshine, windy.
10	76	86	56	S.W. Ditto.
12	79	86	62	S.W. Scattered clouds.
2	70	87	46	N.W. A shower, a high gust of wind, and loud claps of thunder.
4	68	87	52	N.W. Scattered clouds.
5	68	87	46	N.W. A shower of hail.
9	—	—	43	N.W. Clear, and but little wind.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Thursday, October 3, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	45	S.W. Cloudy, and a brisk wind.
8	69	84	52	S.W. Ditto.
10	78	84	60	S.W. Ditto.
12	80	85	60	W. Ditto.
2	72	85	63	W. Ditto.
4	73	85	59	W. Ditto.
9	—	—	52	W. Cloudy, dark.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Friday,*

*Friday, October 4, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	S.W. Cloudy, windy.
8	72	84	55	S.W. Ditto.
10	74	84	61	S.W. Flying clouds.
12	73	80	67	S.W. Ditto.
2	70	80	66	W. Ditto.
4	77	80	65	S.W. The sky is overcast.
5	75	81	60	S.W. Ditto.
9	—	—	55	S.W. Cloudy, dark.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. In the forenoon I cut the greatest part of the shoots of the plants off, and I had all the mould taken off the side flues. The remaining shoots or branches of the plants were divested of the greatest part of their leaves, and about two inches thick of fine fresh leaf mould laid among them. The shoots were then laid down with their joints among the fresh mould, and fixed with small wooden pegs. The flues were then swept clean with a hair hand broom, and the plants were watered moderately all over their leaves, with water about 82 degrees warm.

*Saturday, October 5, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	53	S.W. Cloudy and gloomy.
8	80	84	57	S.W. Ditto.
10	79	84	60	S.W. Cloudy, and a brisk wind.
12	80	84	63	S.W. The sun shines faintly.
2	85	85	64	S.W. Ditto.
3	90	85	63	S.W. Ditto.
4	86	86	62	S.W. Ditto.
9	—	—	52	S.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the



morning, and covered up in the evening with hay and mats. Air was continued day and night. To-day I sowed cucumber seeds in leaf mould about three inches deep in a pan, and I set it in the cucumber frame on the north side flue in the middle light of the middle frame, about one foot north of the thermometers; the seeds are of this year's sowing.

*Sunday, October 6, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	52	S.W. Cloudy, and a brisk wind.
8	78	84	58	S.W. Ditto.
10	79	84	61	S.W. The sun glimpses.
12	86	85	65	S.W. Ditto.
1	90	86	65	S.W. Thin clouds cover the sky.
3	80	86	66	S.W. Ditto.
5	79	86	60	S.W. Gloomy.
9	—	—	49	S.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about four inches thick of hay and mats. Air was continued till 5 o'clock in the evening, when the lights were shut down for the night.

*Monday,*

*Monday, October 7, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	45	S.W. Light clouds, but little
8	80	85	50	S.W. Sunshine. [wind.
10	84	85	60	S.W. Ditto.
12	90	86	61	S.W. Light clouds cover the
2	101	87	59	S.W. Sunshine. [sky.
4	89	88	57	S.W. Ditto.
6	—	—	52	W. Clear, and a brisk wind.
9	—	—	49	W. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was given about 9 o'clock in the morning, and at 1 o'clock the plants, flues, and every part of the frames were sprinkled with water 85 degrees warm, and the lights shut close down for the night. The seeds that were sown on Saturday appear double coming through the mould. To-day the dung of the north side lining was taken away, and a lining of fresh dung put in its stead.

*Tuesday, October 8, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	46	W. Clear, and a brisk wind.
8	78	83	51	W. Clouds here and there.
10	77	83	57	W. Ditto.
12	79	83	61	W. Cloudy.
2	76	83	61	W. Ditto.
4	72	83	58	W. Ditto.
9	—	—	53	W. Ditto.

The frames were uncovered about 8 o'clock in the morning,



morning, and covered up in the evening with hay and mats. Air was given from about 9 o'clock in the morning till 5 in the evening. The seedling plants are up, and their leaves begin to expand.

*Wednesday, October 9, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	52	W.	Cloudy, nearly calm.
8	79	83	55	W.	Gloomy.
10	80	83	58	W.	Thin clouds.
12	90	84	62	S.W.	Sunshine.
2	91	85	64	S.W.	Ditto.
4	86	86	59	S.W.	Ditto.
5	80	86	55	S.W.	Clear, and nearly calm.
9	—	—	50	S.W.	Foggy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. The plants were stopped, their leaves thinned, and some showing fruit nipped off. The plants, from the seeds which were sown last Saturday, were planted in pots in leaf mould, three plants in each pot, and set in a row on the north side flue.

*Thursday, October 10, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.	
6	—	—	41	S.E.	Misty.
8	81	86	47	S.	Sunshine.
12	86	87	62	S.W.	Ditto.
2	83	87	65	S.W.	Ditto.
4	80	86	62	S.W.	Clouds cover the sky.
9	—	—	53	S.W.	Cloudy, dark.

The frames were uncovered between 7 and 8 o'clock

6 o'clock in the morning, and covered up in the evening with single mats. Air was given at 8 o'clock in the morning, and continued day and night. The plants were shaded for about two hours in the hottest time of the day. About 4 in the afternoon the plants, flues, and every part of the insides of the frames were watered with water about 80 degrees warm. The linings were raised with fresh dung.

*Friday, October 11, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	S.W. Cloudy, nearly calm.
7	70	84	51	S.W. Gloomy.
8	71	84	52	S.W. Ditto.
10	73	83	55	S.W. Ditto.
12	79	83	59	S.W. Hazy.
1	81	84	60	S.W. Ditto.
2	81	85	60	S.W. Ditto.
4	80	85	59	S.W. Ditto.
5	79	85	58	S.W. Ditto.
9	—	—	54	S.W. Cloudy, dark.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with mats. Air was continued day and night.

*Saturday,*



*Saturday, October 12, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	53	S. E. Foggy, nearly calm.
7	79	85	54	S. E. Ditto.
10	85	85	62	S. E. Light clouds.
12	90	87	67	S. E. Sunshine.
1	91	87	67	S. E. Ditto.
2	95	88	68	S. E. Ditto. [there.
4	83	88	64	S. E. Light clouds here and
9	—	—	56	S. E. Clear, and nearly calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with mats. Air was continued day and night. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set.

*Sunday, October 13, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	S. W. Clear, and nearly calm.
8	77	86	55	S. W. Light foggy clouds.
10	80	86	60	S. W. Ditto.
11	87	86	66	S. W. Sunshine.
1	85	87	64	S. W. Ditto.
2	86	87	63	S. W. Ditto.
4	77	86	59	S. W. Light clouds, nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with mats. The first rough leaves of the seedling plants, which were sown the 5th instant, are fairly expanded.

*Monday,*

*Monday, October 14, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	70	83	52	S. Hazy.
8	72	83	52	S. Ditto.
10	76	83	59	N.W. Ditto.
12	81	84	62	N.W. The sun glimmers.
2	85	85	60	N. Cloudy.
4	78	85	57	N. Light clouds.
9	—	—	46	N. Clear, nearly calm.

The frames were uncovered about 6 o'clock in the morning, and covered up in the evening with mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. In the morning, about 8, plenty of cold water was poured on the flues, and the plants were gently watered with water about 78 degrees warm, but not over their leaves. The flues were watered again in the evening. Air was continued night and day.

*Tuesday, October 15, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	33	S.W. Clear, and a white frost,
8	64	80	37	S.W. Sunshine,
10	79	80	44	S.W. Ditto.
12	84	82	50	W. Ditto.
2	97	85	54	W. Ditto.
4	84	86	51	W. Ditto.
9	—	—	50	W. Mottled sky.

The frames were uncovered between 7 and 8 o'clock in the morning, and covered up in the evening with mats. Air was continued day and night.

*Wednesday,*



*Wednesday, October 16, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	W. Cloudy, and nearly calm,
7	73	84	50	N. Ditto.
8	70	83	51	W. Clouds here and there.
10	84	84	54	W. Sunshine.
12	85	85	58	W. Ditto.
2	95	86	57	W. Ditto.
4	80	86	55	W. Ditto.
9	—	—	46	W. Clear, nearly calm.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with [mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. At noon the flues were well watered with cold water, and the young plants in pots were watered with water about 80 degrees warm. Air was continued night and day.

*Thursday, October 17, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	43	W. Light clouds,
8	74	82	47	W. Hazy.
10	77	83	52	W. Ditto.
12	84	84	59	N.W. Ditto.
2	80	84	58	N.W. Ditto.
4	76	84	56	N. Ditto.
5	72	84	55	N. Ditto.
9	—	—	52	N. Cloudy, dark.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with mats. Air was continued day and night. The north side lining, being funk, was raised with hot dung.

*Friday,*

*Friday, October 18, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	42	W. Misty, nearly calm.
8	67	80	45	W. Gloomy.
10	70	80	50	W. Ditto.
12	75	80	55	W. Ditto.
1	75	81	57	W. Ditto.
2	72	81	54	W. Ditto.
4	71	81	53	W. Ditto.
9	—	—	50	W. Cloudy.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with mats. In the forenoon I stopped the plants, thinned their leaves, and set the fruit in blossom. Air was continued day and night. The young plants have their second rough leaves fairly expanded.

*Saturday, October 19, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	42	W. Misty, nearly calm.
8	71	81	50	W. Cloudy.
10	72	81	51	W. Ditto.
12	75	81	54	W. Ditto.
2	72	81	55	W. Ditto.
4	72	81	53	W. Ditto.
5	68	80	51	W. Ditto.
9	—	—	50	W. Light clouds.

The frames were uncovered at 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was continued day and night. The plants were stopped, and the fruit in blossom set. The young plants were stopped for the first time; they



they are strong and healthy, but rather long shanked.

*Sunday, October 20, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	49	W. Cloudy.
8	69	80	50	W. Light clouds.
10	73	80	55	W. Ditto.
11	75	80	57	W. Cloudy, and a brisk gale of
1	74	80	57	W. Ditto. [wind.
3	73	80	55	W. Ditto.
5	70	80	52	W. Ditto.
9	—	—	50	W. Ditto.

The frames were uncovered at 8 in the morning, and covered up in the evening with hay and mats. Air was continued till between 4 and 5 in the afternoon, when the lights were shut down for the night.

*Monday, October 21, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
7	—	—	45	W. Clear in the west, cloudy in
8	78	83	45	W. Sunshine. [the east,
10	82	84	52	W. Ditto.
12	90	85	57	W. Ditto.
2	80	85	57	W. Ditto.
4	82	85	57	W. Clouds here and there.
9	—	—	50	W. Ditto.

The frames were uncovered a little before 8 in the morning, and covered up in the evening with hay and mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given at 9 o'clock, and continued day and night. About noon the young plants were watered and shaded for about

about one hour; at 4 o'clock plenty of cold water was poured on the flues. The linings, being sunk, were raised with fresh dung and watered. Having prepared a nine-light bed for the young cucumber plants, to-day I had linings put to it. To the north side of the bed an entire new lining was applied, but to the ends and south side only half a lining of new dung was applied, that is, about twenty inches of rotten dung was suffered to remain in the foundation of the south side and end linings, so that the height of fresh dung laid on was only about twenty inches. The dung applied to the north side had lain in a ferment for some days, but that of the south side was fresh from the stables.

*Tuesday, October 22, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	49	W. Cloudy, nearly calm.
7	80	85	49	W. Ditto.
8	78	85	51	W. Ditto.
10	78	85	53	E. Hazy.
12	76	85	60	E. Ditto.
1	82	85	58	E. Ditto.
2	81	85	57	E. Gloomy.
4	75	85	54	E. Ditto.
9	—	—	59	E. Cloudy.

The frames were uncovered about 7 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. In the morning the plants were stopped, their leaves thinned, and the fruit in blossom set. The end linings were taken down about twenty inches, and made up with hot  

U
dung.



dung. The bed for the young plants was covered up in the evening, five or six inches thick with hay and mats.

*Wednesday, October 23, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	46	E. Hazy.
8	80	85	48	E. Ditto.
10	81	85	53	E. Light clouds.
12	84	86	58	S. E. Ditto.
2	87	86	55	S. E. Sunshine.
4	78	86	52	S. E. Light clouds.
9	—	—	44	S. E. Ditto.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. Air was given day and night. About half an inch thick of fine mould was laid on the surface of the bed among the branches of the plants. The shoots of the plants are run thick and strong to the sides of the pits, and some of them are run upon the tiles of the flues. In the afternoon cold water was poured plentifully on the flues.

*Thursday, October 24, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	34	S. E. Clear, and nearly calm.
8	74	83	38	S. E. Sunshine.
10	84	84	44	S. Ditto.
12	80	84	51	S.W. Thin clouds:
2	74	84	51	S.W. Ditto.
4	73	83	49	S.W. Ditto.
5	68	83	48	S.W. Ditto.
7	—	—	44	S.W. It rains a little.

The frames were uncovered about 8 o'clock in the morning,

morning, and covered up in the evening with about three inches thick of hay and mats. The air in the frames of the bed, to which a lining was applied on Monday last, being come to a proper degree of heat this afternoon, I planted the plants in it: In doing which I turned them out of the pots with their balls whole, and set three plants in each hill, covering their balls with fine mould, three inches up the stems of the plants above the surface of their balls. In the evening the lights of these frames were covered up after the same manner as that of the old bed. The young plants just planted are beginning to break forth their shoots after the first stopping.

*Friday, October 25, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	45	S.W. Hazy.
8	77	84	47	S.W. Ditto.
10	75	83	52	S.W. The sun appears faintly through lofty clouds.
12	79	84	56	S.W. Brisk gale of wind; it rains lightly.
2	72	83	53	S.W. Fair, cloudy, windy.
4	68	83	52	S.W. Ditto.
9	—	—	46	S.W. Cloudy, and a strong gale of wind.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about three inches thick of hay and mats. In the forenoon the plants were stopped, their leaves thinned, and the fruit in blossom set. Air was given about 9 o'clock in the morning, and taken away between 4 and 5 in the afternoon. The air in the frames of the new



put out plants was kept to nearly the same degree of heat as above. The plants look well.

*Saturday, October 26, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	55	S.W. Cloudy, and a strong gale
8	80	85	57	S.W. Ditto. [of wind.
10	78	85	58	S.W. Ditto.
12	80	85	59	S.W. Ditto.
2	76	84	58	S.W. Ditto.
4	70	84	57	S.W. Ditto.
5	74	84	56	S.W. The clouds look rainy.
9	—	—	50	S.W. Drizzling rain.

The frames were uncovered a little before 8 o'clock in the morning, and covered up in the evening with hay and mats. Between 4 and 5 o'clock in the afternoon the flues and mould close adjoining to them were watered with cold water, and then the lights were shut down for the night.

*Sunday, October 27, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	50	S.W. Cloudy, and but little wind.
8	81	86	53	S.W. Some drops of rain fall.
10	76	86	55	S.W. Small rain.
12	80	86	58	S.W. The sun glimmers.
1	78	86	58	S.W. Cloudy.
2	75	85	57	S.W. Ditto.
4	72	85	53	S.W. Clouds here and there.
9	—	—	44	S.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats.

mats. Air was given at 8 o'clock in the morning, and continued day and night.

*Monday, October 28, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	36	S.W. Clear, and but little wind.
8	76	85	39	S.W. Ditto.
10	80	85	44	S.W. Sunshine.
12	85	85	52	S.W. Ditto.
1	91	86	52	N.W. Ditto.
3	90	86	51	N.W. Ditto.
4	75	85	50	N.W. Ditto.
9	—	—	37	N.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with about two inches thick of hay and mats. The plants were stopped, their leaves thinned, and the fruit in blossom set. Air was continued day and night.

*Tuesday, October 29, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	44	S.W. The sky is red a good way up the horizon.
8	70	83	47	S.W. Cloudy, and a brisk gale
10	72	83	53	S.W. Ditto. [of wind.
12	75	83	54	S.W. Ditto.
2	70	83	54	S.W. Ditto.
4	68	82	52	S.W. Gloomy, windy; the clouds look rainy.
7	—	—	51	S.W. It rains.
9	—	—	51	S.W. It rains heavily.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay



and mats. Air was given in the day-time, but the lights were shut down during the night.

*Wednesday, October 30, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	32	S.W. Clear; there had been a heavy rain in the night.
8	70	83	34	S.W. Sunshine, but little wind.
10	76	83	37	S.W. Ditto.
12	80	83	42	S.W. Flying light clouds.
2	75	83	42	S.W. Clouds here and there.
4	70	83	40	S.W. A light shower.
9	—	—	33	S.W. Clear, and nearly calm.

The frames were uncovered about 8 o'clock in the morning, and covered up in the evening with hay and mats. Air was given at 9 o'clock in the morning, and continued till evening.

*Thursday, October 31, 1793.*

Hours.	S.Th.	P.Th.	Ther.	Wind.
6	—	—	28	S.W. Clear, and nearly calm.
8	74	83	30	S.W. Ditto.
10	79	83	34	S.W. Sunshine.
12	84	84	37	W. Ditto.
2	81	84	42	N.W. Ditto.
4	72	84	36	N.W. Clouds here and there.
5	70	84	32	N. Clear, and nearly calm.
9	—	—	29	N. Ditto.

The frames were uncovered at 8 o'clock in the morning, and covered up about 5 in the evening with hay and mats. In the morning the linings were raised with dung fresh from the stables. About noon the plants were stopped, their leaves thinned, and

and the fruit in blossom set, and the mould adjoining to the flues was watered with water about 80 degrees warm. The young plants were watered and stopped the second time. Air was given a little before 9 in the morning, and taken away in the evening.

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TO carry on farther the account of the management of the plants would be superfluous. I have cut fruit from them in ten months of the year, and since they were cut in, their shoots laid, and the flues cleared of mould, which was done on the 4th day of October, the plants have struck root afresh, and are now, this 31st day of October, in a vigorous, healthy, flourishing state, with fruit showing plentifully, and some set; and if the weather prove favourable, perhaps fruit may be cut from them in November and December, and, by good management, they may be enabled to continue producing fruit during the greatest part of the year 1794.

From the 2d of October 1793 to the 25th of January 1794, not the smallest grain of snow was perceived to fall at this place, and during that time but very little wind was stirring. On the 25th of January the wind from the west rose very high, and about 1 o'clock some snow fell, and the mercury in the thermometer sunk to 27.

Sunday, January 26, was clear all day, and a strong gale of wind blew from the west.



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Monday, January 27, 1794.

Hours.	S.Th.	Ther.	Wind.
5	—	25	E. It begins to snow, and the wind is boisterous.
7	—	27	E. The ground is covered with snow about 7 inches thick.
8	—	30	S. The snow lies on the earth about 10 inches thick.
9	75	32	W. Fair, windy.
10	69	30	W. Sleet falls.
12	61	25	N.W. It snows, and the wind is exceeding high: It blows quite a tempest.
2	67	30	N.W. Clear, the wind is fallen.
4	61	26	N.W. Clear, and a brisk wind.
8	—	21	N.W. Clear, and nearly calm.

The frames were uncovered at 9 o'clock in the morning, and covered about 4 in the evening with about three inches thick of hay and mats. Air was continued day and night at every light.



## A P P E N D I X.

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THOUGH the newly-invented method exhibited in this book, has been but a short time published, I have the pleasure to behold, and know it to be put in practice and approved of by gardeners of much longer practice, and in some respects of greater abilities, than myself. Nor have I heard the invention spoken against by any person whatever. Indeed I have had from different parts of the country, the private congratulations of several strangers, for, as they term it, "my ingenious invention." And for a public recommendation of the work, I can with satisfaction refer the reader and the curious to the CRITICAL REVIEW of January, the MONTHLY REVIEW of February, the BRITISH CRITIC of July, and the ANALYTICAL REVIEW of December.

Two years are now elapsed since I finished writing this volume; and after that length of time, of additional experience, and a review of the work, I can see no reason for making any alteration or addition to the method therein held forth, one thing only excepted, viz. A gentleman near London, in the autumn of 1794, having built a bed after my plan, his gardener putting it into practice, lost his plants several times in the course of the following severe winter.

Having



Having called on him, I no sooner saw the inside of his frames, than I explained to him the cause of his failure, which was occasioned by the mould in which the plants grew, not being raised high enough above the flues, the flues left wholly bare of mould, and a powerful lining of hot dung high up against the sides of the frames, quickly drying the flues, and thereby divesting the air too much of its nutritive vegetative powers. By means of these, the leaves of the plants appeared as if they had been affected by the steam of rank hot dung.

In the treatise, I conceive, I have given sufficient directions for guarding against such unpleasant consequences; nevertheless, I shall here observe, that it is the safest way to keep the flues constantly, from the time the plants are put in during the winter, covered with about one inch thick of mould, keeping it moistened with water as occasion requires.

By experience I find it a very good way to sow the seed in the hills of mould in the fruiting bed, and to earth up the stems of the plants gradually as they advance in height. But this method cannot be practised without plenty of dung to begin with.

ADDISCOMBE PLACE,

November 1, 1795.



